

PERSONALITY and PERFORMANCE

A Study of Students following a Three Year Course
at
Cardiff College of Education.

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B.A., M.A. Wales; M.Ed. Edin..



Thesis presented in accordance with the regulations
for the degree of

Ph.D.

Edinburgh.

1967

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DECLARATION

This dissertation is the result of the writer's independent investigation. The assistance obtained from other sources is given in the Acknowledgements and Bibliography.

This thesis has neither been submitted, in substance or in part, for any degree nor is it being so currently submitted except in part fulfillment of the requirements for the degree of Ph.D. Edinburgh.

Signed

ACKNOWLEDGMENTS

It is a generally recognised practice that theses begin with a formal acknowledgment of help received. That this is a convention does not detract from the sincerity of these tributes.

First I must express my thanks to Professor Drever for his many kindnesses and particularly for supporting my candidature in the department of psychology.

Secondly, I owe a particular and overwhelming debt of gratitude to Dr. H. John Butcher who, in spite of his many obligations as a member of the psychology department, then Deputy Director of the Godfrey Thomson Unit for Educational Research in the University of Edinburgh and now Professor of Higher Education at Manchester, acted as my supervisor, mentor and friend and extended the hospitality of his home to me when I visited Edinburgh as well as arranging to see me when he came to Wales. Above all, I am grateful for his understanding and encouragement when problems arose. While I cannot sufficiently convey my thanks to him, whatever shortcomings may be found in this dissertation are entirely my personal responsibility.

A number of other names are given in the text of some of the people who have been of personal assistance, many of whom are now personal friends and I should like to thank the organizer of the research conferences at Swansea and Manchester for enabling researchers to meet in this way. Two colleagues at Cardiff require special mention, Dr. K.M. Evans whose work in this field first attracted my attention to it and Mr. R. Pitts who involved me in his researches as an undergraduate and who kindly lent me his E.M. Scale.

The review of researches has necessitated extensive use of library facilities and I am grateful to the University and other specialist body librarians who were so generous in providing information and were so courteous and helpful when I visited their libraries. I am particularly indebted to Mr. H.E. Bates at the University College of S. Wales, Miss Edith Owen of the City of Cardiff College of Education and Mrs. Heulwen Thomas of the S. Wales College of Domestic Arts as well as to their staffs and to that of the Cardiff Central Library.

It is a matter of profound personal regret that three people with an interest in this enquiry died before its completion. One of them was Professor Eric Evans whose friendship and interest was a great encouragement. Another was Mr. Walter Jones, Principal of the Cardiff College of Education, whose unfailing trust, kindness and support enabled the project to be undertaken. Coupled with the name of

Principal Jones must be that of my present Principal, Miss Nanci Jones of the S.W.C.D.A. as well as Mr. Hywel Roberts, Head of the Education Department at Cardiff, not to mention by name the friends and colleagues on the staff who helped by their interest and co-operated so readily in providing all kinds of information about their students and this work.

The third person was a student from the main sample who died shortly after completing his course in the Aberfan school tip disaster. Students may not be as virtuous as they would like to be thought but neither are they lacking in fine qualities as their detractors sometimes maintain. In this enquiry they gave really massive co-operation and answered personal and professional enquiries with patience and good humour. They worked hard and without this effort the research would have had to be abandoned in the first term. Many even volunteered to assist with the clerical work involved: Michael Davies was such a one.

Finally, as most of this work was done during evenings, weekends and vacations, I owe a special word of thanks to my wife for her forbearance and assistance and an apology to my young sons for my inexplicable absence from so many of their adventures in quest of pleasure. I hope one day they will understand.

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Chapter I

Synopsis

This dissertation may be considered to fall into a number of convenient sections. Essentially the study is an experimental survey of a group of students in training designed to test certain specific hypotheses: These are given on page 109 and a summary of the results of testing them is given on page 400.

For reasons of logical coherence, however, the first chapter is a general discussion of some of the concepts and the problems of assessment in personality study, while the pages up to chapter nine are devoted to a review of some of the relevant literature. For this reason an account of the operational research begins on page 99 .

Introduction

The initial difficulty in any consideration involving a term such as 'personality' is that it has a particularly wide range of meanings. The crude distinctions between the popular use of the word as indicating "social skill or adroitness" or "the most outstanding or salient impression which he creates in others" are worthy of only a passing reference: nevertheless, these superficial qualities may be regarded as facets of personality as we would use the word and, anticipating somewhat, may account, for example, for discrepancies between unstructured interviews and measurements using more objective instruments.

In one of the more recent books in this field, Lazarus (1964) draws a distinction between the layman's use of the term which involves a value judgement and that of the psychologist :

"The psychologist, in contrast, means by personality, certain determining qualities that are reflected in behaviour. The term has a scientific meaning independent of any value judgements.....scientific personality assessment involves describing a person as he is rather than evaluating him by our own private standards of what is desirable or undesirable." (P. 28 - 29).

Should we accept the proposition that an initial requirement for a meaningful discussion would be to frame a definition of personality, then we might set about the formulation of such a definition. Unfortunately, this is a problem of such magnitude that it might occupy the entire energies of a philosopher for a considerable period of time, for as Robinson (1950) pointed out in his The Definition of Definition these are of many kinds, for example lexical, literary and historical and this thesis is not devoted to an analysis of casuistic definition.

The phylogenesis of 'personality' can be traced with comparative certainty to Hippocrates in Ancient Greece and it has exercised the minds of creative artists of every kind as well as the philosophers for generations before the development of "experimental philosophy". Interesting as such ontogenetic, literary and historical enquiries are, they fall outside the scope of the present work. Even the question of what is to be the approach to 'personality' is confined to this initial chapter.

Keniston (1956), at the very outset of his discussion on theory construction in relation to personality theory, states that,

"A theory is composed of a number of inter-related elements;" and goes on to list these as follows:

1. rules of interpretation, which link theoretical assertions to statements of empirical facts;
2. postulates, which assert a relationship between two or more constructs;
3. axioms, which logically introduce constructs into theory;
4. definitions, which formally define one construct in terms of another by which it is completely replaceable;
5. theorems, which are deductions from axioms, postulates and definitions of theory.

He then goes on to give nine criteria which he considers relevant to the assessment of theory. This compares with five given by Allport (1938), the five given by Sears (1959), the five by Welmen (1960), and the six by Hall and Lindzey (1957).

In Allport's (1938) work there is a very detailed analysis of a number of ways in which personality may be defined and understood and rather as in the projective technique of object sorting, he shows that an entry may be made in a number of different categories. His main classification is seven fold:

1. Etymology or early history of the term.
2. Theological meanings.
3. Philosophical meanings.
4. Juristic meanings.
5. Sociological meanings.
6. External appearance.
7. Psychological meanings.

On purely theoretical grounds, it may be possible to differentiate between what Allport calls bio-social and biophysical definitions where the former depends upon the effect produced upon other people by the individual, while the latter stresses the organic basis of the individual's personality.

In this investigation it is not intended to make any formal declaration of adherence to the biosocial or biophysical view points. Nor is it intended in the present study to enter into a detailed discussion of personality theories as advanced by those classified by Bischof (1964) as the biophysical - biophilosophical theorists, Freud, Jung, Murray and Sheldon (although the latter inspired a P.E. colleague to pursue a line of inquiry using morphology with the men in the main sample who were following the P.E. course: the writers' data has been traded for this information and it is hoped to analyse this at a later date). Neither is it intended to analyse the views of those linked for their concern with biosocial - social interaction Adler, Sullivan, Horney and Moreno, nor of Rogers, Allport and Murphy, described as 'General and

integrative theorists'. Rather it is intended that the experimental enquiry should be developed along purely empirical lines in exploring certain limited hypothesis within the framework of a generalized concept of personality.

The ways in which attempts have been made to approach the question of the assessment of personality are legion: at the same time, most of the employed techniques may be considered to fall into three broad categories, although there will inevitably be a certain amount of overlap as far as a particular measure is concerned. These are the subjective, objective and projective techniques. The subjective technique developed primarily as a result of the exigencies under which the early experimentalists worked and is in a sense an extension of introspection. As Flugel (1959) says in his Hundred Years of Psychology.

"To Wundt introspection (Selbstbeobachtung) had meant very little more than having an experience and subsequently describing it. In the hands of the Wurzburg works it meant, rather, a special attitude, the adoption of which enabled the observer to study his experiences in detail as though under a microscope".

It is clear that there are considerable qualitative and quantitative differences between the schools of psychology using introspection as a specialized technique in itself after the pattern of the early experimentalists and those who use more generalized introspection as a subjective technique. The argument is that the latter derives notionally from the former and is functionally related to it in its reliance upon the reports made by the subject. So it is that, strictly speaking, all questionnaires concerning opinions and attitudes fall into the category of subjective estimates.

'Objective techniques' is a term used fairly indiscriminately in psychological writing. It is frequently used in relation to 'pencil and paper tests' of the questionnaire variety. This can be justified on two grounds, namely that such instruments usually limit the range of possible responses by offering a limited number of them for selection by the

candidate: the marking of these can then be declared to be objective according to the criteria laid down. Another way in which the appellation 'objective' is often justified is by the agreement that the measuring instrument has been carefully constructed and standardized. Thus it may be internally consistent, arrange the scores of subjects along a continuum, ^{and} represent in its statements extreme or intermediate view points with which competent judges would concur: it may even be reliable in producing a similar distribution of subjects' scores on more than one occasion. But such instruments are far more difficult to make valid or consistent with the opinions of others, for at this point the subjective element of the judge enters the picture.

Many inventories do attempt to make themselves more efficient instruments by incorporating built in checks of consistency. Naturally some may still be faked and this is the standard objection of the layman. This point will be examined more closely a little further on. By any reasonable standard some techniques are considered objective. These may be physical or performance tests requiring the subject to reach a certain goal or complete a certain task. This may include physical measurement and can vary from full scale to miniature 'real - life' situations as well as certain categories of paper and pencil tests such as those of perseverance and intelligence. Projective techniques have been developed largely in an attempt to probe those areas of personality outside cognitive control or outside conscious control. Thus it may be that in any ^{given} circumstances the subject may subjectively be aware that his own feelings or thoughts in relation to a certain question constitute an undesirable response and so will select what he considers to be a more acceptable response amongst those offered.

In other circumstances the subject may be highly desirous of answering truthfully about his personal attitudes and opinions and yet, the source of his motivations in respect of any particular subject may

be outside his conscious awareness.

It is abundantly clear from any review of the literature dealing with personality assessment or the theoretical uses arising therefrom that typically very low agreement, as denoted by correlation coefficients, are obtained from various assessments of personality. What is surprising is that there should be an expectancy of a high degree of relationship for, from what has already been said, it is evident that personality is a particularly complex concept and most techniques will be able to concern themselves with only a very narrow range of the whole spectrum of personality. Moreover there are many potential sources of variability.

It is clear that in any given situation the subject's view of himself may be compared or contrasted with that held by those in authority over him, those who are his peers in the situation, and those over whom he exercises some authority.

A second major source of variability is likely to be in the methods, techniques or instruments used in making the assessments.

A third major source of variability is likely to be related to the circumstances under which the subject is being assessed: this applies not merely to the degree of motivation inspiring the various assessors but also whether the situation is one rather than another of the infinitely large number of situations to be found in domestic, social and recreational as well as in work or training settings.

Finally, the nature of the aggregate of the individuals in terms of the sample used may also considerably influence the findings, not only because different occupational, social, educational, sex or age groups may be involved: most of these variables are usually taken into consideration in research in the

field of personality as in other psychological enquiries. What appears to be of critical importance is that if, as both Eysenck and more recently, Cattell suggest, certain personality characteristics such as Introversion/Extraversion and Anxiety - Neuroticism form the basis of personality, then the selection of groups to form the experimental sample or samples may involve some particular pitfalls for work in the field of personality. The literature reveals that since work in this field is ipso facto of a highly personal nature that the technique of random sampling generally used in other fields of enquiry and that of stratified sampling sometimes used in specialized circumstances are both rejected in favour of work with volunteers. The point at issue here is not that the data is usually treated as if it were obtained by random sampling, or that this also involves certain assumptions about the usual distribution of the quality under consideration from the scores obtain and hence, indirectly and by inference about the variables themselves; when there is no evidence to the contrary, it seems that the most logical hypothesis to make about the data and the most reasonable manner to treat it is to assume that the quality is normally distributed. It is rather to stress the danger of working with a biased sample.

Specifically calling for volunteers in personality assessment may well mean that the sample will fail to include the very subjects about whom it is most important to collect information, the nervous, perhaps the neurotic and those who are shy or very withdrawn. Accordingly, as is described later (P. 99) the investigation was so designed as to eliminate the need for volunteers or at least to structure the situation in such a way that it was harder to opt out of the investigation than to remain in it. In terms of methodological development Cattell and Eysenck have probably gone as far as any in empirical investigations linked with developing personality theories, although there are important differences in the views and approaches of these two

eminent researchers. Cattell, is grappling with the task of developing a comprehensive theory of personality from investigations of human beings in artificial, or experimental, and everyday situations, and the result is that of a highly complex inter-related pattern of inherited and acquired behaviour which takes into account the diversity of learning theory. Eysenck on the other hand, tends to stress the nomothetic approach more than Cattell as well as the influence of inherited characteristics but he has not evolved his theorising to such an elaborate extent and feels that a comprehensive view of personality has yet to emerge in his own work or that of others.

The notion of an ideal personality for the teaching profession is a chimaera which has eluded researchers and bedevilled a great deal of the experimental work in this field. Yet it is perfectly logical to assume that there may be certain hypothetical qualities present in some teachers and that these account for the influence which they are able to have upon their pupils. That these qualities have an 'existence' is testified again and again in casual conversations as well as in literature. Clearly, therefore, since personality qualities produce an influence of a certain magnitude or extent on others we may seek to measure them.

That most experimentalists working in the area of teaching performance have come to similar conclusion is evident from the review of studies conducted by Eliassen and Martin (1945). Some early works like Copper (1928) in asking "Who is a good teacher?" sought to find an answer by analysing the qualities of outstanding teachers such as Socrates, Christ and Pestalozzi but Eliassen and Martin found that during the two year period up to 1939 the prime concern of researchers was with 'scholarship', and 'personality' lay in third place, only a little before 'intelligence' and after 'health'. In the subsequent

years to 1943, the positions of personality and scholarship were reversed with intelligence receiving as much attention as scholarship, while there was a general increase in the attention devoted to personality factors such as emotional stability, social co-operation and attitudes.

The review of researches conducted in this enquiry confirms that there has been a tendency to move away from this search for a single ideal personality type, for as Vernon indicates, there may be more than one such type suited for teaching. The review is classified fairly arbitrarily according to a number of criteria as indicated by the headings of the sections. As is fully realized they could be grouped in a number of other ways: some researches appear more than once where this is felt to be warranted. Others which could be similarly treated have had references to them restricted to one section. Such treatment is not intended as a value judgement on the pieces of work but reasons of time and space, as well as of relevance to the argument being prosecuted sometimes cause apparently cavalier treatment of famous names and considerable pieces of work.

Thus, in the present investigation no attempt is made to undertake a general review of personality theory, nor to study a group of students with a view to considering which body of theory appears most applicable. Instead, personality for the purpose of this research is taken to include the cognitive as well as the connative aspects of the person and a number of hypothesis based largely, but not exclusively on the work of Cattell and Eysenck have been made. To these have been added others based on personal experience of working with students in training for teaching. (P.110) These hypothesis are then examined by means of a statistical analysis of data derived from instruments and college records. The scope of the

enquiry is therefore limited to a general survey of research in personality or personality facets only to the extent to which these apply to teaching, and even this is not claimed to be anywhere near comprehensive, while the expirical work examines only a handful of variables with a single group. The impossibility of making more than a minute contribution is fully recognised. As Toynbee (1963) said:

"To quote the Gospel according to St. John, 'the world itself could not contain the books that should be written', by a competent psychologist if he were to set himself to make an exhaustive record of all the psychic events that occur in a single psyche within the shortest period of time that the subtlest recording instruments can measure". (P. 278)

But the magnitude of the task in education should be no disincentive for there are still to be found those who would subscribe to the following view, advanced in evidence to the 1843 Parliamentary Committee on the State of Education:

"If a man were sufficiently well skilled in writing, reading and arithmetic, he could learn in five months the difficult art of teaching?"

"Yes, decidedly; and it may be learnt in three months, if he has tact....."

Finally, since the experimental section of the inquiry is largely a statistical analysis of a group, a small number of students has been considered separately in individual case studies, albeit in relation to the performance of the group (P.370), for as Allport (1963) recently maintained:

"Psychology is truly itself only when it can deal with individuality.....We study the human person most fully when we take him as an individual." (P. 573).

This then is the scope and delimitation of this research. It is aimed primarily at testing specific hypothesis (P.109 and 400) which are

derived from a variety of previous investigations. The interrelations between the major measures used are largely included to assist other researchers who may be particularly interested in aspects of personality assessment which are peripheral to the main lines of inquiry pursued in this investigation.

THE QUALITIES OF THE TEACHER: AGREEMENT BETWEEN DIFFERENT VIEWPOINTS

It is very evident that teachers may be seen in a very different light by those who are still pupils and by those who were pupils some years ago. The general view of those in authority is that the pupils' views are likely to be distorted and on the face of it their views are of little value in spite of the fact that they are people most in contact with the teacher qua teacher.

Evans (1952) remarked in her comprehensive review of researches in this field that "It is unlikely that any responsible person would be willing to accept the opinions of pupils as the sole criterion of a teachers' efficiency." (P.44). This is a perfectly valid point and a number of investigations have concerned themselves with this very problem of the value of the pupils' opinions.

Knight (1922) working in three sample towns in Massachusetts found what he claimed to be a high degree of agreement between the scores of teachers who were rated by their fellow teachers and their supervisors as well as their pupils.

The hesitation which most of us would feel in accepting the judgment of children about their teachers probably stems from notions such as the one that those children who receive high marks from a given teacher will tend to rate that teacher comparatively highly.

Blum (1936) working with college students found no relationship between the grades received from instructors and the ratings which they were prepared to give to them. On the other hand Bryan (1937) working with children in Secondary school did discover a tendency for those with low marks themselves to award lower grades to their teachers than were awarded by pupils receiving higher marks: in spite of this, little general relationship was discovered between pupils' performances and their estimates of their teachers.

A point which did emerge from this study by Bryan may illustrate

another variable which has attracted some attention in this field from almost the very beginning, that of sex difference. Bryan found that girls tended to rate women teachers higher than boys did: similarly boys rated men teachers higher than did the girls. Herda (1935) had been another to report little sex difference in teacher preference but where it did operate, it seemed to be in favour of men.

Returning to our main theme of the moment, Bryan's findings appear to be in direct contradiction to the popular view we expressed above regarding the value of pupils' opinions. In two respects the pupils' ratings were found to be superior to those of the administrators: the agreement between the various pupil groups was closer than with the administrators and they were relatively more varied in their opinion from item to item, which is another way of saying that the pupils appeared to be less vulnerable to "halo effect".

In the very first volume of the "British Journal of Educational Psychology", Cattell (1931) attempted to draw together what previous studies had discovered in this field. After summarizing the work of Book, Raymert and Kratz he concluded that the student's view of the ideal teacher is expressed by reference to the following qualities:-

- | | |
|-----------------------------------|------------------------------------|
| 1. Kindness | 6. Personality & Will (leadership) |
| 2. Sense of humour (cheerfulness) | 7. Outside interests |
| 3. Open mindedness (justice) | 8. Perseverance (Patience) |
| 4. Sympathy and tact | 9. Orderliness (clarity) |
| 5. Self-control | 10. Presence |

What is of particular interest in Catell's study is that he goes beyond the view of the teacher as seen by one group of observers and derives information by means of questionnaire from various groups of assessors - administrators, inspectors, lecturers etc., on the qualities of good young and mature teachers. The various lists of qualities were analysed and the comprehensive one constructed as follows:-

- | | |
|-------------------------|-------------------------------|
| 1. Intelligence | 12. Enterprise |
| 2. Physical Health | 13. Conservation |
| 3. Presence | 14. Alertness of mind |
| 4. Self Control | 15. Orderliness and Precision |
| 5. Personality and Will | 16. Idealism |
| 6. Sense of humour | 17. Outside interests |
| 7. Kindness | 18. Knowledge of subject |
| 8. Open mindedness | 19. General culture |
| 9. Sympathy and tact | 20. Social fitness |
| 10. Enthusiasm | 21. Knowledge of psychology |
| 11. Perseverance | 22. Classroom techniques |

Cattell then reclassified these according to what he found to be their importance and listed twelve qualities so that the first six were representatives of qualities which were twice as important as the succeeding six.

1. Personality and Will
2. Intelligence
3. Sympathy
4. Open mindedness
5. Sense of humour
6. Idealism
7. General Culture
8. Kindness
9. Enthusiasm
10. Knowledge of Psychology and Pedagogy
11. Classroom technique
12. Perseverance

Two points in particular may be made with convenience at this juncture. The first, that it is interesting to note that Cattell's concluding list gives such prominence to personality qualities (in

addition to that termed "Personality and Will"). It was this same subjective observation which prompted the present investigation.

The second point is that Cattell's observations pinpoint the fact that different groups i.e. pupils and administrators will frequently have different conceptions of what constitutes the ideal teacher. Moreover, as Jersild (1940) maintained it is possible that children and adults generally judge teachers in different ways. It is with the latter aspect that the following section is concerned.

THE QUALITIES OF THE TEACHER : THE JUDGMENT OF EXPERTS

In our discussion of personality it was determined that for the purpose of this essay that the term would represent the sum total of neuro-psychological activities whether manifested in the intellectual or emotional systems. In rather the same manner we have been content to talk of "The Teacher" for although this is another abstract conception it conveys sufficient meaning for the purposes of our discussion up to this point.

Difficulties now arise when we contemplate the manner in which experts - defined as those who may have special knowledge, experience or training - may hope to pass evaluative judgments on the quality of the work of the particular individual teacher. What in fact does "Teaching Ability" mean? Does it encompass all the activities in which a teacher may engage from time to time or does it refer only to those in which the teacher is most frequently engaged? Clearly the answers to these questions depend on the outlook of the individual and different studies have attacked different aspects of the questions.

If we accept the notion of the teacher as a person who is employed to teach and whose work may include all kinds of activities involved in the transmission of knowledge and ideas (the preparation, presentation and assessment of work, organization, keeping of records etc., etc.) as well as the formation of attitudes and moral qualities, then we have

a stipulative definition which agrees to a large extent with the general conception of the "Teacher".

This leaves us with the problem of defining "Teaching Ability". In the discussion of the views of the theorists it has been evident that although most have embraced the idea of a generalized teaching ability they have tended to concentrate upon the particular qualities or capacities which they considered of prime importance. It should not surprise us then to discover that in this section which discusses the results of experimental enquiries that the same pattern should be followed and extended logically: thus the early enquiries tend to concentrate upon tabulating general statements, the late ones to concentrate upon selected aspects e.g. the acquisition of skill or knowledge on the part of the pupil. (This is discussed under Pupil Gain and Pupil Change. P.27 below).

Kent (1920) saw the difficulty when rating scales were to be applied and provided a classification of some of the various factors which could be selected. From the point of view of the teacher abilities relating to organization, administration and social work: from that of the pupils, those relating to his knowledge, skills, attitudes and habits.

Many variations on this theme occur in the literature in the field for example in the following year Brooks (1921) listed the qualities necessary for the optimum teaching performance:

1. Natural aptitude for the work.
2. Managing ability.
3. Method and technique.
4. Interest and industry in the work.
5. Personality.

Sandford and Trump (1950) suggest in their general review of some of the 675 publications on the various aspect of teaching and training

which had appeared since 1905, that the most common criterion in use for judging teaching ability is the judgment of experts. This is hardly surprising since the experts constitute the examining bodies who select the students, and also decide what their standards are at the end of the course: at one time too, the selfsame individual experts make the follow up assessments in the schools.

Yet, it would give only a partial picture if we were content to accept the judgment of experts, for other interested individuals might be consulted with advantage in addition to the pupils under the teacher at the time of the enquiry. Stott (1950) pointed out that parents set up their own criteria for judging teaching ability and these may include a consideration of -

1. the results of examinations:
2. the capacity to exercise discipline:
3. the character and personality development of children:
4. the way in which backward or problem children are handled.

We are thus faced with the fact that there are many kinds of criteria which may be used to define success and although this is true of many kinds of work it is particularly so in the case of complex work such as Teaching.

We turn now to a consideration of some of the conclusions reached by various researchers in some of these approaches to measuring teaching ability.

THE QUALITIES OF THE TEACHER: THE VIEWS OF PUPILS

By the beginning of the twentieth century serious attempts were being made by a number of research workers to investigate the personal qualities of teachers. Many of these sought to consider the problem from one angle alone, namely by canvassing the views of the teachers' pupils.

One of the earliest large scale investigations was that carried

out by Kratz (1896). In this, 2411 children ranging from the 2nd to the 8th grade inclusive were asked to recall all their teachers. From them they were to select the one who had helped them most and they were then asked to provide answers to the following three questions:

1. In what way did she help you most?
2. Do you recall any special word or act of hers which greatly helped you? If so, what is it?
3. Will you write, in a half a dozen sentences, a description of the best teacher you have had without naming her.

In the general discussion of the replies it was stated that most of the replies included statements to the effect that the 'best teacher' was generally said to be -

- (a) Helpful with studies;
- (b) Of good personal appearance;
- (c) Good or kind;
- (d) Patient and polite;

It would be unjust to criticize the early research workers too harshly for what they lacked in tools for analysis they made up for in enthusiasm and if their questions were naïve they boldly tackled large samples. The practice of accepting pupils' views persists, but with the passage of time the accent has gradually moved until today, when the replies may still be used to supply information about a teacher, for example, by means of the technique known as "teacher change", but they may also be used to provide information about the pupils themselves. Thus, while we may for completeness, consider a number of other early studies which have apparently accepted statements made by third-parties about teachers at their face value, it is not suggested that the views expressed in them should be given too great weight.

The next contribution in this field was by W. F. Book (1904) and (1905). In the former he had considered the problems of "why pupils

drop out of High School" and had concluded that in the regions of 10% dropped out of courses of study because of their antipathy towards certain teachers. Where this had happened the pupil's typical statement was that the particular teacher lacked sympathy and understanding.

In the latter, Book (1905) discussed in rather general terms 1067 essays written in High School on a topic which must have read "Some Sympathetic Teachers I have had, or the reverse". Whether all wrote precisely on the same topic or whether there were more than one is not too clear from the report. The results too were handled in very general terms and although they were discussed at some length under such headings as "The Teacher's Character", "Their Qualifications" and "What they did", little in the way of quantified results were produced.

After an interval of just over a decade the theme was again explored by Bird(1917) who asked pupils to try to recollect the "best" teacher they had ever had and then to try and describe "what are the five or six qualities of the best teacher you ever had?"

The ten qualities receiving the largest average percentage of votes were:-

- | | |
|-----------------------------------|--------------------------|
| 1. Fairness | 5. Good temper |
| 2. Kindness | 6. Ability to discipline |
| 3. Sociability | 7. Neatness |
| 4. Sense of humour | 8. Patience |
| 9. Adequate preparation | |
| 10. Ability to impart information | |

(In the case of the girls' "Kindness" came an easy first)

Amongst the faults which these pupils condemned were:-

Favouritism, Hypocrisy, sarcasm, lack of sympathy, lax, easy methods and lack of confidence in pupils.

A comparison of these essay type answers with those derived from children in Germany became possible after the work done there by

Keilbacker (1932). In this study 3,967 pupils aged between 10 and 20 were asked to write an essay on "What I would like my teacher to be". The material was again classified according to the frequency of mention of the teacher's sex, age, outward appearance and so on. What is of particular note in this study is that the title frankly accepts the notion of an idealized teacher - something which most earlier research workers were probably getting reports about, from their subject without apparently being aware of it.

In an M.A. thesis on The Personal Relationship in Teaching, Hollis (1935) used the questionnaire technique with a sample of 8,043 children aged 11-18. Part of this questionnaire included a list of 7 qualities (derived to some extent from some of the studies reviewed in this section). These the children were asked to list in order of preference. The order in which they were given to the pupils is indicated on the left below, the order of popularity is indicated by the pupils on the right.

- | | |
|---|----|
| A. Has wide interests and refers in his lesson to facts of every-day life outside the actual subject. | 6. |
| B. Is firm and keeps strict discipline. | 7. |
| C. Is friendly and sympathetic and encourages pupils to do their best. | 2. |
| D. Is very just and fair. | 3. |
| E. Allows pupils to ask plenty of questions and put forward their own ideas. | 5. |
| F. Has a sense of humour. | 4. |
| G. Explains all difficulties patiently, giving pupils time to understand points one by one. | 1. |

Hollis concluded that pupils tend to like personal, friendly relationships to exist with teachers: teachers are liked for specific qualities they possess and this often transfers to subjects they teach. Pupils also were said to like discipline "arising from respect for the

neutral statements about a Junior School Teacher and written a short essay about the person visualized that the antonyms would relate to this conceptualized teacher.

The results were analysed according to sex and school. The conclusion arranged the terms in descending order of total percentage.

"The generalised stereotype of a teacher which is produced from the total information gained in the survey is an image of a happy, clever, well-dressed, knowledgeable, tidy, solvent, interested, humourous, impartial, friendly, changeable, sociable, plain, patient, loud-spoken, interesting, strict, easily angry person who does not go to church".

THE QUALITIES OF THE TEACHER : THE VIEWS OF STUDENTS AND ADULTS (RETROSPECTIVE ANALYSES)

It is evident that there is at least a logical possibility of there being a difference between the views of pupils and those who were pupils. This could be accounted for in terms of differences in motivation, maturity and experience. Certainly casual observations suggest that most adults have a higher regard for schools and all that is associated with them than do the pupils who attend them.

In exactly the same pattern as Kratz, Bell (1900) asked 1031 students of education and pedagogy to recall all their past teachers to select the one which they considered to have done them most good and then to describe this teacher in terms of "both physical and mental traits". They were also asked to comment upon the teacher they disliked the most.

The replies were listed under a number of headings.

1. Moral influence;
2. Intellectual influence;
3. Personal interest in pupil, kindness, encouragement, sympathy, politeness etc.;
4. Self reliance

5. Social graces

Dolch (1920) set an essay entitled "My Best High School Teacher" to 82 students who were embarking on their first year in University. This researcher was apparently a teacher of literature and the analysis consisted of simple listing of the themes and a statement of the number of times they occurred as follows:-

1. Know how to teach	69
2. Was interested in students	50
3. Had good discipline	40
4. Knew his subject	39
5. Made work interesting	38
6. Was good natured	31
7. Had broad education and interest	23
8. Was interested in student activities	20
9. Was fair	15
10. Was socially popular	11
11. Had an attractive personality	10
12. Was stern	9
Was practical	9
Had a good character	9
13. Had a sense of humour	6
Compelled attention by students	6
14. Trusted students	4

Witham (1914) concentrated on a consideration of what mature adults considered important in schools. He asked 50 Educationists to indicate what they considered to be the relative importance of various factors to the efficient running of a school. Although a number of factors were given none was rated at higher than 10% while the contribution of the teacher was given a rating of 60%.

The weaknesses in making subjective estimates of others was noted in this field by Knight (1923). The main theme of this

investigation was the distortion produced on estimates by the influence of the "Acquaintance factor". Knight concluded that supervisors tend to overrate teachers as compared with the normal curve and this tendency is increased where the assessors have known the teachers for a prolonged length of time. (Confirmation of the first point is found in the present experimental work below, P.360:7)

Conversely Corey (1933) made the interesting point that distortion of judgment could be reduced by canvassing the views of those who know the teacher well rather than by watching him teaching. This may well avoid the problem of causing the teacher's performance to vary drastically in an examination situation, but it does not provide a solution to the problem of who really does know the teacher well.

Another study which sought to examine the characteristics of teachers "liked best" as "disliked most", as in the earlier studies of Kratz (1896) and Bell (1900) was that of Jersild (1940). In this late study there was the further analysis of the views expressed severally by children and adults. It was found that, whereas the former tended to judge teachers in terms of their specific characteristics as teachers, the latter tended to evaluate them in terms of quantities desirable in any walk of life. In other words the adult views tended to be more generalized and abstract whereas those of the children were more particular and concrete. The findings fit equally well into the schemata of what is known about thinking in terms of developmental psychology and the psychology of learning.

In order of importance, the qualities of the best liked students derived by Jersild from students were:-

1. Human qualities as a person:
2. Physical appearance, grooming, voice:
3. Characteristics as disciplinarian or class director:
4. Participation in pupil activities:
5. Performance as a teacher, teaching:

6. Miscellaneous.

In an attempt to throw greater light upon the question of the time at which pupils' opinions of their teachers might change Royce and Bryan (1944) investigated the opinions of children during the first five years after leaving school. They found that during this time little change occurred and where they did they were usually brought about by subsequent contacts with their teacher.

Not all studies have concerned themselves with the opinions of students regarding school teachers, but some have enquired into student opinions of college teachers. Typical of these is that of Geyer (1946) who obtained a list of desirable qualities in college instructors from one group of senior students. This was then ranked in order of preference by four other groups and the results correlated which produced measures of agreement between these groups ranging from 0.53 to 0.83.

The qualities listed by the students were as follows:-

1. Knowledge of subject matter
2. Personality to put the course across
3. Fairness or impartiality
4. Ability or skill in teaching and organizing subject matter
5. Ability to get along with students
6. Sincerity and honesty
7. Sense of humour
8. Appearance

Drucker and Remmers (1951) investigated the question of whether alumni and students differ in their attitudes towards instructors. They were asked to consider what personal traits were desirable in instructors and then to list these in order of importance. There was general agreement between past and present students in that seven of the ten qualities were given the same prominence by both groups.

Jensen (1951) analysed and classified the reports of 144 experts on 500 critical incidents in the behaviour of successful and unsuccessful teachers: these were given as follows:-

- 1.) Personal Qualities (a) Optimism (b) Fairness (c) Self-control
- 2.) Professional Qualities (a) Knowledge of subject matter and techniques of teaching
(b) Ability to get student response
(c) Business-like approval
- 3.) Social Qualities (a) Sympathetic, understanding
(b) Democratic
(c) Friendly, commending
(d) Ability to judge reactions of others

In each of these categories the successful teachers tended to be indicated as behaving in a superior fashion to the unsuccessful teachers.

In conversation, people often attribute a course of action they have taken to the influence of a particular teacher. Recently, Briggs (1959) has suggested that the attitudes engendered by teachers may persist in time to such an extent that they influence the choice of subject later and instances the fear of mathematics as being a transfer from a fear of a teacher.

Students in training are often critical of their courses and many teachers remain critical of their college experiences after they enter the profession e.g. (Othen) 1967. But many appear to be reasonably satisfied with their courses according to Charlton, Stewart and Paffard (1960) and it may even be that, as Scott and Brinkley (1960) maintain, the attitudes of student teachers undergo changes during training and the degree of change in a favourable direction may be influenced by the favourable attitudes not only of college staff but of the teachers they encounter on teaching practice.

CHAPTER III

TEACHING ABILITY AS MEASURED BY PUPIL GAIN

A number of research workers have sought to discover a method utilising the pupil's reception of the impact of the teacher while, at the same time, eliminating the subjective quality involved in collectioning pupil's opinions. Theoretically, the proposals in essence have entailed measuring the pupil's work before a teacher begins work with them and at the end of the specified time to remeasure them and to attribute the resulting gain (or decrease) in score to the impact of the teacher. Usually the measurement would be applied to growth of knowledge and skill, but as Barr (1935) argued, changes in attitudes and ideals should also be taken into account in measuring teaching ability in this way. Thus, on the one hand there have been those such as Buckingham (1920), who have searched for a simple straightforward method of assessing pupil change and those from a slightly later period like Coy (1930), who have agreed the need for experimental and statistical controls.

The criterion of pupil gain has also been compared with other assessments by Crabbs (1925). She found when comparing objective and "semi-subjective" evidence that teachers are most alike in their efficiency of teaching spelling and are most dissimilar in their efficiency of teaching silent reading. The relationship between supervisor's estimates and pupil gain varied considerably, as Lancelot (1935) discovered with Maths teachers, from subject to subject that there was a slight tendency for the most efficient teacher in one subject to be most efficient in another, although the calculated coefficient of correlation was only approximately 0.20.

Using the criterion of pupil success as the measure of teaching efficiency Davis (1934) related the results obtained by pupils in State High School Examinations to the qualifications of their teachers

and found little relationship between them. What was discovered was that teachers who had the strictest discipline produced the best results in these examinations.

The question can also be asked in this context of whether "good results" on the part of pupils necessarily indicate good teaching. In this context Sandiford makes the point that a large number of other teachers may have effected the situation by inculcating habits of accuracy or industry in the same or allied subjects, not to mention the influences of relations and friends.

In the following year Betts (1935) used the measure of pupil achievement as a variable with which to correlate scores obtained on a NS trait: this was defined as "A measure of the difference between novice and superior teachers" (derived from a test battery validated upon the two categories indicated). In all 54 teachers of 1214 pupils were studied and a positive correlation, six times its P.E. was obtained between the NS trait score and pupil achievement. Rostker carried out an interesting study reported in (1940), (1942) and particularly in (1945). The essential characteristics of this study were that data was collected on 28 teachers of 375 pupils in Wisconsin and that the data was analysed against the criterion of pupil change, in teaching a particular section of social studies, when their initial and final scores from which the pupil change was assessed, were adjusted for pupil differences in initial achievement, intelligence and socio-economic status. According to this study, using this adjusted pupil gain criterion, teaching ability was found to be closely related to intelligence, social attitudes, attitudes towards teaching and knowledge of subject matter and how "to diagnose and correct pupil mental maladjustment". On the other hand Rostker failed to discover any significant relationship between teaching ability as measured by the criterion and either supervisory ratings or personality as defined and measured in this study.

In this particular study one can sympathise with the desire to control conditions by seeking to eliminate initial differences in the pupil's characteristics: it is altogether another matter as to whether this is either justified as a theoretical technique, since teachers may vary in the extent to which they succeed with pupils of different psycho-social organisations, or whether techniques of allowing "for initial differences" work without distorting the evidence e.g. the well known fact that multiple correlation may give rise to spuriously high correlation coefficients with a given criterion.

Nevertheless, the conclusions do in part agree with those of others who use the unadjusted pupil gain scores as a criterion.

Gotham (1945) who likewise worked in Wisconsin schools attempted to relate ratings on various personality traits to pupil change in citizenship studies in the case of 47 teachers. Correlation coefficients which indicate a significant degree of relationship were found between the first 2 and pupil change but the second two do not quite reach significance at the 5% level:

-0.35	Interest in work	Sig. at 5%
0.30	progressiveness	Sig. " "
0.25	refinement	N.S.
0.23	adaptability	N.S.

It would seem reasonable, therefore, to attribute at least part of the difference in the results of Gotham and Rostker to the difference in methodology employed in measuring pupil gain.

Yet when attempts have been made to relate overt acts by teachers they have generally failed to establish any clear relationship with pupil gain. An instance of this is found in the work of Jayne (1945) where the same lesson was taught to classes of similar ability by 10 teachers of varying ability and all the action was recorded, yet little association was found between what the teacher said or did and the ways in which the different classes increased their knowledge.

In 1945 "The Journal of Experimental Education" devoted a complete issue to developments in this area and reported on the work of a number of researchers. One of these, Brookover (1945) investigated the work of 66 male teachers of History by administering questionnaires to them, their supervisors and their pupils and related these to pupil gain. There was agreement on a number of points, e.g. that teachers who enjoyed their work were considered to be good teachers and that teachers who had the most friendly relations with their pupils were considered as most able, both by the pupils and those in authority. Yet these conclusions were not found to agree with the criterion of pupil gain.

Two investigators who "used a modification of Rostker technique reported their work consecutively in the same issue of the Journal of Experimental Education. Lins (1946) carried out an investigation involving a main sample of 204 students as well as 58 serving women teachers who took up their positions in Wisconsin schools during 1943 after gaining Teacher's Certificate of that University. Our only concern at present is with the latter group who were used to investigate the criteria that might be employed in measuring teaching efficiency. Three measures were produced:

1. A composite of five ratings based on evaluation by assessors who visited the teacher at work.
2. Pupil assessments.
3. Residual pupil gain, calculated by a modification of Rostker's technique, in five subjects for a total of twenty-eight classes.

When the data were correlated no significant relationship was found between the three predictor variables. By the use of multiple correlation in the main study five predicted variables yielded an $r=+ 0.680$ with a composite of supervisor ratings. When the number of variables was increased to six and the number of cases restricted to seventeen the multiple correlation coefficient was increased to 0.976:

perhaps 'inflated' might be a better term to increase this procedure which of necessity has distorted and forced the relationships to an artificially high level.

Von Haden (1946) used the same sample of 58 women teachers as did Lins and also employed the same measures of teaching efficiency.

Material in terms of interview reports and autobiographers, from the period during which the teachers had been undergoing training was studied: this information was then classified in terms of personal qualities of behaviour patterns as follows:-

- | | |
|---------------------------|--------------------|
| 1. Adaptability | 2. Considerations |
| 3. Energy | 4. Initiative |
| 5. Professional judgement | 6. Social adequacy |
| 7. System of values | 8. Work habits |

From the resulting matrix of correlations from correlating these factors with the measures of teaching efficiency, 24 of the 25 were significant at the 1% level when the particular criterion was that of supervisory ratings. But when pupil gain^{*} was the criterion then "only five per cent of the correlations with these criteria yield coefficients significant at the five per cent level". (The particular measure was residual pupil gain as employed by Lins, A.G.J.)

Hoyt (1955) used six teachers in two schools in an experiment so that each teacher taught each of three classes in two schools. The difference was that for one class, the teacher was given only the names of the pupils while for the second test results on pupils were supplied and on the third, test information and its interpretation and personal data was available. Control of sex and intelligence were also controlled. Surprisingly in the impersonal, name only situation, English results were rather better in terms of pupil gain at the end of a term, but there were no differences at a significant level in social studies or mathematics. At the same time, the attitudes of the pupils to the teacher were better in the situation where the teacher had the maximum

amount of information about the pupils but this was only at a significant level in one school. Overall no significant differences in pupil gain in terms of total results were obtained.

Keislar and McNeil (1959) found that teachers were most influenced in their regard for a particular teaching method by their pupil gains on it, than by the (assumed) regard that the pupils had for one or other of the methods employed when the subject matter was spelling.

The conclusion to which one must come, after reviewing some of the experimental work in which the attempt has been made to consider the quality of the teacher's work through the changes produced in the pupil's work, is that there are probably more variables in the situation than have been successfully controlled to date. We have already argued earlier in this section that changes may be produced by other teachers previously, or other subject teachers or by the influence of friends and relatives. More experiments might cancel out chance influence but it would be as well to equate the groups according to stringent criteria by measuring intelligence, attainment and socio-economic status, by considering sex difference for the pupils and the teachers and then to consider the question of pupil gain in terms of attitude, interest and skill, as well as of fact.

A final point might be that few of the experiments consider the question of maturation which means that all the groups may not be similar if equated according to the other criteria but not this one; even if they are equated at the beginning of a prolonged experiment their relative standards of development may have changed considerably in time rather than as a result of external forces.

Thus although this constitutes a theoretically ideal method of considering teaching capacity, it is fraught with technical and administrative difficulties which seriously prejudice its general utilization.

CHAPTER IV

THE USE OF RATING SCALES IN THE MEASUREMENT OF TEACHING ABILITY

An alternative method to that of seeking to measure changes in the pupils while at the same time attempting to eliminate some of the wide variability liable to be included in any canvassing of opinion has been that of using rating scales. Unfortunately, as we shall see, no general agreement exists as to what qualities should be included when assessing any individual and in many ways the position is worse when the intention is, as Rugg (1921 and 1922) pointed out, to assess the quality of a teacher. Most researchers tend to select the variables in which they are interested and carry out ratings using these. Even then there is wide variation in the ratings they consider important and the way they carry out the rating operation.

In general terms most researchers offer scales on which each quality to be considered may be rated on any one of five positions, although some use as few as three or more than seven. These may or may not be represented diagrammatically or have the individual positions defined linguistically, although ideally they should have both. They vary too in whether they require verbal statement, a letter or a mark and as to whether or not they indicate what the distribution of grades should be. The number of raters also varies considerably: the more judges the greater the statistical reliability of the scale, but at the same time the increase in number may lower the validity, if not all the judges have equal opportunities of knowing the subject being assessed.

Another considerable source of variation in the making of ratings is the distortion produced by extraneous influences such as halo effect or prejudice. Most researchers have apparently attempted to reduce halo effect by arranging that the traits should be considered individually for the whole group. Very few have alternated the polarity of desirable traits and in most instances, particularly with work carried out prior to the 1950's, it is not clear what precautions, if

any, were taken in obtaining ratings.

Pupil's Ratings of Teachers

There are obvious problems in asking children to rate their teachers and perhaps because of these comparatively few studies using this approach have been made; so together with them will be cited examples of ratings carried out by students of their teachers.

In an early investigation Blum (1936) tackled what many consider to be cardinal problems of the validity of pupils' ratings. The surprising conclusion was that in the case of the students who formed the sample in this survey, no relationship was found to exist between the grades which the students received from their instructors and the ratings which they were prepared to give to their mentors according to their ability to teach.

Another facet of the problem was investigated by Heilman and Armentrout (1936) who investigated the consistency of students' views of their teachers. The Purdue Rating scale was used with the 2115 students who classified 46 of their teachers on ten traits and the reliability coefficient was found to be 0.75. In the following year Bryan (1937) investigated the same problem with 1500 school children and obtained similar results with coefficients for different groups ranging from 0.61 to 0.97. Little evidence that the children's estimates of their teachers were affected by the grades received from them except that the extreme groups did tend to rate their teacher correspondingly higher or lower. While no general sex preference for teachers was found, each sex tended to accord the highest ratings to teachers of the same sex. Herda (1935) had also found little marked sex preference but where it occurred it was generally in favour of men teachers.

Brookover (1945) was concerned with investigating the relation between social factors and teaching ability. While no sex preference for teachers was discovered, both pupils and supervisors awarded higher

ratings to those teachers who had the closest social relations with their pupils.

As part of their work in establishing the validity of Form X-164 of the Minnesota Teacher Attitude Inventory, Cook & Leeds (1947) obtained one of three criteria of teacher-pupil rapport by using a Pupil-Teacher Ratings Scale consisting of 50 Yes-No-? items. A random sample of 100 teachers of grades 4 - 6 inclusive were each rated by 25 of their pupils on this scale. The pupil ratings were found to have a reliability coefficient of .93, and they were found to agree with the Inventory as well as with the ratings of Principals and Experts to beyond the 1% level of significance. The correlation coefficients were:-

Pupils' ratings of teachers with Inventory	0.45
" " " " " Principals'	0.39
" " " " " Expert's	0.33

In the earlier section on student opinions, reference was made to the study by Drucker and Remmers (1951) in which past and present students agreed in general terms on what were the desirable traits of instructors. When present students were asked to rate their teachers on these same traits they were found to have accorded a slightly higher rating than past students, although most of these differences were not significant.

RATINGS BY EXPERTS

During the 1910's serious attention started to be paid to the formalizing of opinions expressed by those in authority about the qualities of the teachers they were assessing. A pioneer investigator, Witham (1914), drew up a three point scale upon which teachers could be rated as "above average", "average" or "below average". The scale covered 46 qualities which included general as well as personality traits and teaching ability specifically. Agreeing with this view,

Pittenger (1917) argued the case for a record card which would ensure that the maximum of essential qualities would receive consideration and so would be more likely to produce a balanced rather than a biased judgement.

Sprague (1917) set out to develop a suitable rating-scale or "score-card" for assessing student teachers in Training and Practice. As a result of information obtained from responses to questionnaires administered to various people concerned with education, Sprague selected 16 items grouped under 4 main headings. These were then administered to 130 experts who were asked to distribute 1000 points between the topics according to what they considered to be their importance in contributing to teaching efficiency. The median scores were found to be as follows:-

1. Teaching skill	357.57
2. Classroom management	222.16
3. Personality	210.85
4. Preparation	204.42

From a further analysis of the distribution of scores a 5-point scale of grades was produced.

In America some authorities have utilized the system of payment by results, interpreted in a number of ways, to reward teaching efficiency. One such system investigated by Connor (1920) had selected the most efficient teachers for financial reward by rating teachers on four main qualities:-

1. The teacher considered as a person:
2. The government of the school:
3. Instruction as providing for educative activities:
4. Teacher's attention to physical, social and welfare of pupils generally.

The modified scale recommended by Connor consisted of a final analysis of psychological characteristics and included items for rating including such topics as the following:-

1. Thinking;
2. Knowledge and Skill;
3. Initiative in socially significant situations;
4. Morale;
5. Emotional reaction;
6. Ethical self-control;
7. Deportment;

In the following issue of the "Journal of Educational Research", Kent (1920) raised the question of whether the same items should be used for rating the work of students and practising teachers. By definition, the former are learning the techniques and skills, while the latter are engaged in the practice of the art of teaching and so should be assessed according to their actual performance as instructors and socializing agents. In concentrating on the measurement of the efficiency of teachers Brooks (1921) elicited what he considered to be the five main areas of importance: these were:-

1. Managing ability;
2. Natural aptitude for the work;
3. Method and technique of teaching;
4. Interest and industry in the work;
5. Personality.

Against this list can be put that of Thomson (1921) who was concerned with producing a rating scale for measuring teaching ability in students:

1. Care in preparation:
2. Logical explanation and questioning:
3. Blackboard and other illustrations:

4. Voice, manner and power of arousing enthusiasm;
5. Power of interesting children, keeping them busy and getting results.

An early example of a graphic rating scale in assessing teaching ability is to be found in the work of Freyd (1923). The 17 qualities for rating included physique, speech and personality as well as interest in teaching and each was represented by five phrases. The ratings were converted to numerical scores on a ten point scale by means of a stencil.

Furfey (1926) was another who sought to enhance the assessment of teaching ability by improving the technique of rating. He concluded that substantial improvements could be made by using longer scales with items arranged in major and minor categories and by converting individual trait assessments to standard scores before combining them.

Much of the difficulty in rating relates to different conceptions of what constitutes a trait. Evans (1952) quotes from the work of Charters and Waples (1929) who attempted a definitive analysis of the traits desirable in teachers as follows:-

"Opinions on the trait desirable in teachers were obtained from school administrators, teachers, parents, Professors of Education, teachers' agencies and pupils. Examples of trait actions were obtained too. The traits were defined by reference to four dictionaries, and the trait actions were translated into traits. The list was then telescoped by combining synonymous traits. The traits were then ranked by 25 judges according to their importance at various stages. The result was a master list of 25 traits. This is given below.

- | | |
|------------------------|---------------------|
| 1. Adaptability | 14. Industry |
| 2. Attractiveness | 15. Leadership |
| 3. Breadth of Interest | 16. Magnetism |
| 4. Carefulness | 17. Neatness |
| 5. Considerateness | 18. Openmindedness |
| 6. Co-operation | 19. Originality |
| 7. Dependability | 20. Progressiveness |
| 8. Enthusiasm | 21. Promptness |
| 9. Fluency | 22. Refinement |
| 10. Forcefulness | 23. Scholarship |
| 11. Good judgement | 24. Self Control |
| 12. Health | 25. Thrift |
| 13. Honesty | " |

In spite of the comprehensive nature of this list the rating scale quoted by Mead (1929) has only a tenuous relationship with it. In this experiment a sample of 130 teachers were rated upon five qualities as well as being classified into 5 groups on their general merit: These were:

1. Technique or teaching procedure:
2. Elements of scholarship useful to a teacher:
3. Factors producing professional improvement:
4. Relations of teachers to the community:
5. Personal relations.

While most of the 'good' teachers were generally rated as high on most qualities, those classified as 'poor' were given low ratings on most traits. The suggestion implicit in this work is that these are essential qualities in efficient teaching, but an equally logical interpretation appears to be that this is an example of 'halo effect' in operation.

By the beginning of the new decade, Barr and Evans (1930) were able to analyse as many as 209 scales for rating teachers! When they did this, however, it became evident that there was a considerable degree of duplication. For example, 200 of the trait names occurred at least 5 times. Moreover, many of the names were variations on the same basic theme. When these were synthesised the following categories were produced:-

1. Classroom management;
2. Instructional skill;
3. Personal fitness for teaching;
4. Scholarship and Professional preparation;
5. Effort towards improvement;
6. Interest in work, pupils, subject taught etc.;
7. Ability to co-operate with others.

Cattell's (1931) initial explorations in this field telescoped the main categories further to the 4 groups -

1. Natural gifts
2. Character and Temperament
3. General Direction of sentiments
4. Matters of Education and Acquired skill.

A further discussion of Cattell's early work is given below (P.13).

From the 1930's most studies involving expert's ratings show a shift of emphasis to descriptive studies of the teachers' personality and the relationships between pupils and teachers.

Odenweller (1936) obtained a number of ratings on personality traits for 560 students, student teachers and experienced teachers from peer groups as well as those in authority. A considerable measure of agreement was found between these ratings, and correlations ranging from 0.256 to 0.581 were obtained. Bryan (1937) likewise found general agreement between ratings made by pupils and those in authority. In this study several different groups were used and there were some marked divergencies, particularly between the overall estimates of pupils and the administrators.

A possible source of variation is that estimates of teachers' performance made by those in authority vary according to differences in time, i.e. different lessons could be seen. A second possibility is that variation is produced because usually in studies in this area the estimates of different persons in authority with regard to different students or teachers are combined. Jayne (1945) carried out an investigation which sought to overcome these shortcomings. Seventeen teachers were rated on 2 different lessons by 4 experienced supervisors yet the correlation between the rankings of the teachers by the supervisors were insignificant. So too, Hampton (1951) analysed ratings of 220 elementary school teachers: it was found that the same rater tended to rate a teacher in the same way on each of the

traits but this correspondence which reached significance at the 1% level dropped to insignificance when the individual ratings given by different raters were compared. Bach (1952) compared the results of ratings and other measures for a sample of 76 teachers using in-service and college data. The pattern of results prompted the following question:

"The presence of sizeable correlations both among pre-service and among in-service ratings, but not between pre-service and in-service ratings leads the author to question a basic assumption, namely, that practice teaching and actual teaching are comparable activities." P. 79.

On the other hand, Jones (1956) working with two contrasting criterion groups of women teachers using composite ratings based on test material and college records obtained difference for the best and worst teachers although the largest differences were on five measures of personality and performance.

Schick (1959) likewise failed to obtain significant agreement between scores on a teacher Judgement Test and supervisory ratings of in-service teaching after 6 months, although the test, the Wisconsin adaptation of the M - Blank, correlated significantly, $r = 0.30$, with the results of college professional courses.

Yet Mann (1961) did succeed in identifying 67 variables in which the most widely separated groups of students in academic performance and teaching practice were differentiated: These variables include ratings, as well as performance material.

Bentley and Rempel (1963) found that a test instrument to measure teacher morale administered to 570 teachers in 22 Indiana High Schools failed to discriminate between those identified by peer ratings as 'high' and 'low' morale groups. But when the criterion was the ratings of expert judges, most of the items discriminated well.

CHAPTER V

ATTITUDES AND INTERESTS IN RELATION TO TEACHING ABILITY

Allport (1963) distinguishes between the choice of concept made by those working in the field of social psychology and those interested in the field of personality : in the former attitudes are favoured, while in the latter, traits are the favoured concept (P.348). In his earlier detailed study of Attitudes Allport (1935) speaks of attitudes as being formed,

1. Through the accretion of experience or the integration of specific responses of a similar type.
2. By individual differentiation.
3. Through dramatic experience or trauma.
4. By the imitation of parents, teachers or playmates (P.810-11).

Traits are regarded as being more general than attitudes but these may be so broad in range that they may be identical with traits.

Yet a third term relevant in discussions relating to views about a given subject is "interest". As Vernon (1962) points out

"Interests are very much the same as attitudes though their definition is a matter of controversy. Their subject matter is usually more concrete". (P.161)

Evans (1965) makes a similar point that interests are more specific and "directed towards a particular object or activity".(P.92).

It is outside the scope of the present enquiry to seek to produce a definitive clarification of the structure of the concepts of regard or drive which impel the individual to adopt a stance in relation to objects, situations or environmental relationships of various kinds. Rather it is intended to review a selected number of researches which seek to examine thinking about teaching whether this be designated as an attitude, interest or opinion in the subject.

In the B. list of researches by Eliassen and Martin, Attitudes are not mentioned prior to 1940, although work involving these are

found in the reports by Manske (1913) and Kent (1920). Interests on the other hand figure quite largely in the literature dealing with teachers and are prominent from the first decade of the century. Some are concerned with studying, like Maclear (1913) the impact of interests outside teaching or the teacher : these are not considered to be within the present terms of reference and are excluded from the discussion.

An attempt to examine the variety of attitude measurement was made by Pace (1950) when 2500 subjects were administered questionnaires designed to discover the activities in which they were interested (engaged) and the attitudes in these fields of activity. When a small sample was re-tested after six months, 85% had identical interests and 75% identical attitudes to the first occasion. Those with the strongest attitudes pursued their interests most strongly.

In an early article in the "Psychological Review" on the subject of the relation between academic interests and success in professional courses, Bridges and Dollinger (1920) correlated the ranks obtained from five hundred students with estimates of their own interests in a variety of courses and their own estimates of their abilities. In spite of the large number of extraneous influences the following relationships were obtained:-

Interest and ability estimate $r = 0.57$

Interest and ability grade obtained $r = 0.25$.

Thorndike (1921) re-analysed the data used in the Bridges and Dollinger study using a random sample of 140 students substituting rank order for the actual grades received. When this was done the following was produced:-

Interest and ability estimated $r = 0.70$

Interest and ability grade $r = 0.46$.

Another fairly typical study of the reasons why teaching attracts some young people is that by Austin (1931). In analysing the choice

of profession put forward by 1105 young people the largest single group was found to be formed of those who selected teaching and consisted of 10% of the boys and 42% of the girls. The most often expressed reasons for making this choice by the fifteen and sixteen year olds were the attraction of the pay and holidays. Valentine (1934) undertook a similar kind of enquiry with University students and obtained, as might be expected, rather more sophisticated responses in that, as well as economic motives, parental influence and a liking for school and children were given as reasons for selecting teaching as a profession.

The relation between experience and teaching performance, without recourse to the measurement of attitude as such, was examined by Pinsent (1933) who discovered that prior teaching added to the advantage of the men as far as teaching was concerned, and to that of the women ~~as far as their academic results~~ as far as their academic results were concerned. Turnbull (1934) obtained similar results in that, groups with prior practical experience of teaching were found to be slightly superior to those without such experience although such experience appeared to militate against degree work. In elaborating on the work of Pinsent and Turnbull, Saer (1941) found much that corroborated the earlier findings about the effects of prior teaching experience but indicated that its quality and the stage at which it was experienced were more important than its duration.

As early as 1920 Kent had argued that at least one of the items measured by teacher rating scales should be "the teacher's attitude to his work." A decade later Cattell (1931) produced his rating scale for use in selection based on an empirical enquiry into what administrators, college lecturers, teachers, students and pupils, considered as important qualities in young and mature teachers. The seventeenth listed trait was 'outside interests'. This is further

discussed elsewhere (P. 14). So too Hollis (1935) from the study of over 8,000 pupils found wide interest to be a desired quality in teachers while all the 7 listed qualities indicate a person of a just and kindly disposition. One of the earliest studies using an Attitude scale as such, is that by Yeager (1935). This scale was part of a battery administered to a group of 500 high school children and those shown as having a favourable attitude towards teaching and teachers were found to be superior in measures of socio-economic status, intelligence, scholarship and personality : Girls were superior to boys on all measures except leadership, but when the boys selecting P.E. were eliminated the latter score was lowered but the levels of scholarship and intelligence were raised.

Not all researchers have measured attitudes and interests by means of formal scales but at the same time it is frequently obvious that they are aware of these factors by the way in which they select for consideration, factors which might today be considered as elements of interest or attitude. Birkinshaw (1935) used the criterion of satisfaction with the work as a measure of teaching success and observed some marked differences among 583 women teachers who were classified as high or low in terms of this criterion. More who were dissatisfied produced reasons for teaching such as having "a liking for people" and interest in a subject or study as such, as well as a desire for security : the least satisfied gave this as their first reason and went on to list the influences of parents, teachers, or friends as well as the economic advantages derived from the grant system for teacher training.

Another study using contrasting criterion groups but this time between a group of 122 teachers in training and a similar group preparing for other work was carried out by Seagoe (1942). Although no great difference in the family background of the two groups was

found as regards a tradition of teaching, nor in the interests of the group in terms of dealing with children in camp and Sunday school, the pleasure derived from these experiences was greater in the case of those who had elected to become teachers.

Tudhope (1944) in two consecutive issues of the "British Journal of Educational Psychology" reported on the analysis of motives for entering teaching, among 643 training college students of both sexes, and on the attitudes towards the college course which they reported encountering in the Secondary Schools from which they had come. What were described by the author as desirable motives predominated - security, fondness for children, a particular subject interest as well as a desire to continue their own education, figured prominently as motives for entering teaching. There were also those who expressed a fondness for teaching as an activity and there were also those expressing the altruistic motive of wishing to do good : the relatively good salary was also mentioned!

The majority were found to have selected teaching prior to entering the sixth form, with the women making their decisions earlier than the men.

Most of the women in Tudhope's group (71%), reported that they had encountered a generally encouraging attitude towards the college from their secondary schools head teacher, but the men were almost equally divided on this question. What was evident was that most secondary school head teachers were biased towards University courses and would have preferred, had their pupils gone there rather, than to a training college. In Tudhope's view this suggested that the attitude of these heads towards the training college course was unsatisfactory. Four years later Best (1948) confirmed most of Tudhope's findings.

Evans (1946) constructed a test of attitude towards teaching as

a career and administered it to 211 School Certificate candidates in eight grammar schools in England and Wales together with the Otis Self Administering Test of Mental Ability and the V.S.A. The slight difference between the attitudes of the girls and boys towards teaching was insignificant although the girls had a slightly more favourable attitude. Of several variables examined, attitude to schools seemed to be most closely related to attitudes to teaching ($r = 0.36$). On the other hand it is perhaps surprising to note that academic achievement as measured by School Certificate results was negatively correlated with attitudes to teaching. Less surprising was the discovery that academic and social interests rather than practical ones were most closely related to a favourable attitude to teaching. The same year Jones (1946) obtained a correlation $r = 0.36$ between inventory scores of attitudes and interests and ratings of teaching activity for 65 teachers. However when the criterion of pupil gain was used the correlation dropped to 0.07.

With an early edition of what later evolved into the M.T.A.I., Cook and Leeds (1947) obtained the unusually high correlations ranging from 0.45 to 0.49 between scores on this Attitude to Pupils Inventory and criteria of teaching success derived from heads, pupils and the investigators. There was even agreement between the criteria of teaching ability and the composite criterion which produced a correlation of $r = 0.60$ with the inventory.

A study by Thimme-Gowda (1948) sought to break down the problem of assessing attitudes to teaching by specific enquiries relating to the attitudes of students in training to various aspects of their course. Scores were obtained, from 198 students on a two-year course and from a group at an emergency training college, on five attitude scales dealing respectively with :-

1. Principles of Education : Theory and Practice:
2. Educational Psychology:
3. General academic subjects:
4. Creative subject e.g. P.E. and Art:
5. School Practice,

and they were related to each other and final Teaching Scores. Some attitude measures relating to self and society were also considered and found to relate to the attitudes of some subjects, but the only variable significant beyond 5% with practical teaching success was the measure of attitude to school practice.

Using a relatively large sample of 466 female subjects drawn from sixth form girls, training and emergency training colleges and a University Department of Education, Champ (1948) obtained attitude scores to teaching which were compared with each other and with those derived from serving and former teachers. The latter had the least favourable attitudes to teaching which is not really surprising since many had retired prematurely, not only because of age or family commitments but because of nervous strain and a dislike for working with large groups. No significant difference was found between the attitude of the groups drawn from different types of schools.

Burroughs (1951) in the study referred to elsewhere (P.91) found that estimates of teaching ability were based on apparently incidental and peripheral factors both when the suitability of a candidate was being assessed at school and at a college interview, although the particular elements varied in the two situations : in the former, social and sporting factors dominated whereas in the latter situation the external facets of personality - speech and appearance especially, weighed far more heavily than estimates of maturity or evidence of scholarship. When evidence from different sources was compared it was not found to tally and Burroughs concluded that data derived

from reports, pencil and paper tests, examinations and interviews provided different and additional evidence about candidates.

In a broadly based enquiry into the factors underlying Teaching Ability, Lovell (1951) obtained twelve sets of ratings of a body of emergency college students and correlated them with each other and the criterion of final Teaching marks. All the correlations were significantly and positively correlated with the criterion indicating halo effect. When factor analysis was used three factors emerged accounting for 65.8 of the variance. These were identified as:-

1. Intelligence and the willingness to use it in the education of children.
2. An empathy factor - the ability to appear live and interesting to children.
3. A speech factor.

General support for this conclusion by Burroughs was provided by Evans (1951) in her "Criterial Survey of Methods of Assessing Teaching Ability." Yet the tenuous but tenacious link between the person's attitude to a task and success in executing it when the task was teaching, continued to be demonstrated this time by Martindale (1951) who obtained a correlation of 0.19 between a measure of satisfaction and a criterion of teaching ability, thus complementing the views of Symonds (1950) who contended that maladjusted teachers were the most critical of the education system, the conditions of work and the people involved.

Higson (1951), like a number of other researchers in the particular era, used a main sample drawn from an Emergency Training College together with two smaller groups of graduates and training college students in making his enquiry into the "Interests of Education" of his subjects. Considerable differences were found between each of the groups and the two sexes with regard to their 'physical, religious and moral attitudes.' (P.61). As one might expect, utilitarian

attitudes predominated in Emergency College students and the more abstract in the University students. Differences were also sought for and found amongst teachers preparing for work with different age groups : primary teacher-students were found to have a significant preference for Education Interests and for Professional Values, whilst Secondary Modern teacher-students generally rejected Religious and abnormal positions in favour of Physical and Utilitarian ones.

The specific reference to emergency Training Colleges at the beginning of the paragraph is simply made as a matter of fact. Some researchers e.g. Grant (1950) and Sutherland (1955) have been concerned with making a specific study of the students in their institutions. Generally, as the latter discovered in Scotland, few significant differences are found between them and other students of similar age who enter normal courses of training.

The theoretical and actual outcome of practical experience in the training of student teachers was given by Waddington's study of the use of play centres (Evans 1961). Of 738 female students completing a questionnaire 479 had attended a play centre and were interested. Of these just over half (53%) had found the work interesting and valuable : (This appears a very disappointing result to the present writer in view of the fact that Waddington reported that the lecturers using these centres for teacher training were so enthusiastic and the interview would be likely to produce the more apparently desirable affective response). A written paper failed to differentiate between the students who had attended the centres and those who had not, but in two colleges the teaching marks of the former group improved.

Ringness (1952) confined his study to 63 male and 37 female undergraduates and related entry and college data to a variety of instruments used by the researcher for measuring attitude to teaching.

They were:-

1. Paired Comparisons.
2. Ranking Questionnaire.
3. Comparison of Profession.
4. Strong's Vocational Blank.
5. Autobiographies.

In addition the complex of teaching performance was assessed by

- a) The criterion of teaching efficiency assessed by visiting college staff:
- b) The criterion of teaching acceptability assessed by interviewing the school superintendent.

Sex differences were discovered in, for example, the paired comparisons when the men stressed the security aspect of teaching and women the welfare. In the reasons given for entering teaching too, men differed from women in placing an interest in the subject matter taught in first place, and 'service to society' second, for they revised the order. In spite of the sex difference on the 'social service' aspect of education, 'welfare' was the only variable on the Strong Vocational Blank found to be in any way related to teaching choice. The time at which the choice was made was also interesting in that this was frequently delayed until college age although, according to the autobiographical reports, an interest in teaching had existed since an early age.

Ringness's guarded conclusion is that :

" teaching success is related to the nature of the reasons for choice of teaching" (which) "may not be the same for all teachers."



Evans (1952) examined the relation between various measures of personality and attitude derived from students in training colleges and a University Department of Education. The pilot study produced insignificant correlations with teaching marks for measures on a graphic scale of sociability and resourcefulness, although the three ratings of each student by fellow students, members of staff and the

research worker showed a significant correlation or halo effect.

The main experiment included also a measure of interests, two to measure Interest in Teaching and a standardized intelligence test. None of the variables produced correlations significant at the 5% level. A conclusion well worth quoting is that used to explain the lack of association between interests and teaching ability :

"It may well be that the student who directs his energy into a few main channels may do the same thing where work is concerned and so may become a better teacher than one who fritters away his energy on many interests." (P.231)

In spite of the fact that Dr. Evans failed to discover an overall pattern of agreement except perhaps, as in this present study with the "capacity of being known", Uttley (1952), working at an emergency training college, was more fortunate. Positive and significant measures of correlation were obtained between tutors' assessments of teaching ability, which Dr. Evans had also considered as the best criterion of teaching efficiency, and students' estimates of each other : this was true of assessments of the qualities of leadership, mental alertness, emotional stability and persistence, but less so far co-operation, mental alertness, sympathy with tact and expressiveness of personality.

A rather more broadly based approach was adopted by A. S. Phillips (1953) who produced tests of intelligence and English suitable for students in training but failed to obtain a significant correlation between them and teaching marks. The third test instrument was a projection test produced by Phillips, consisting of 2 cards showing 'a child' and 'a teacher after work'. This instrument was first used upon a group about whom information had been collected on a five point scale under ten headings:-

1. Cheerfulness at, and contentment with work.
2. Friendliness and good disposition.

3. Freedom from prejudice
4. Emotional stability
5. Wide interests
6. Sense of humour
7. Ambition and idealism
8. Social adequacy and poise
9. Patience and tolerance
10. Sympathetic understanding of children.

The responses produced by the students were then classified and the characteristics as represented by the above reports examined. On the basis of these subjective comparisons standards were evolved and when the test was administered to the main sample the responses were classified as follows:-

1. Sketch I Understanding Children.

Higs - Appreciating their problems.

Lows - External of behaviour

Mediums - Conflicts. Adult view point.

Sketch II Cheerfulness at, and Contentment with work.

Higs - 1. Critical of Character 2. Approval.

Lows - Critical of Work.

Mediums - 1. Criticism, 2. Approval, 3. Vagueness and superficiality.

2. Friendliness and Good Disposition

Higs - Outward training interests.

Lows - Inward training interests.

Mediums - 1. Vagueness and ambiguity. 2. Description

3. Freedom from Prejudice

Higs - 1. Tolerance and width of view. 2. Criticism.

Lows - Egotism 2. Dogmatism.

Mediums - 1. Vagueness and ambiguity 2. Emotional Stability.

4. Emotional Stability

Highs - Annoyance	2. Reaction	3. Fear
Lows - Annoyance	2. Reaction	3. Fear
Mediums - Vagueness and ambiguity		

5. Sense of Humour

Highs - Inward directed humour	2. Literary affairs
Lows - Outward directed humour	
Mediums - Vagueness and ambiguity	

6. Ambition and Idealism

Highs - Economic security	2. Ambitions for his children.
Lows - Happiness and companionship.	2. Ambitions for his children.
Mediums - Vagueness and ambiguity.	

7. Social Adequacy and Poise

Highs - Effort	
Lows - Panic	2. Self display
Mediums - Vagueness and ambiguity.	

8. Patience and Tolerance

Highs - Lack of perseverance	
Lows - Conditional perseverance	
Mediums - 1. Impatience	2. Unqualified perseverance
3. An appeal to some extraneous authority	
4. Vagueness.	

This research has been quoted at some length because it attracted the present writer for two main reasons. First, as a projective test it circumvented many of the problems encountered in research with students, especially the tendency which probably exists of eliciting 'desirable' rather than accurate responses to questions of a professional or personal nature. Secondly, the results quoted by the author are amongst those with the highest measure of agreement with teaching ability encountered in the literature on the subject: for the measure of sympathetic understanding of the children with the

criterion r was 0.27; emotional stability correlated at 0.59 with this criterion and good disposition produced the high association of $r = 0.71$. The multiple correlation was $r = 0.81$.

Unfortunately, in spite of a number of attempts to replicate the conditions of this experiment, the present writer was unable to classify the responses of the subject into sufficiently clear cut categories for this approach to be developed for inclusion in the main study. The information obtained is therefore only included in the qualitative and not the quantitative description of the subjects involved in the present research.

The complexity of the factors surrounding attitudes in relation to teaching ability was demonstrated by Evans (1953). Not only did attitude scores of students drawn from three colleges and a department of education vary among themselves and fail in each case to relate to teaching marks, but in three instances significant negative correlations were produced between the attitude and intelligence measures. The author suggested that the population's social and economic conditions might account for the phenomenon. Another reason might be the distribution of the scores on the two tests in question.

The dual aspect of 'attitude' as a factor in teacher training in so far as both the tutors and the students were measured for their views was a feature of the research by Robertson (1953). A collection of fifty attributes which were considered by eighteen tutors to contribute towards teaching success were found to be covered by the following categories listed in order of importance.

1. Attitude and insight in dealing with others.
2. Attitude and insight in learning to teach.
3. Teaching abilities.
4. Range of Personality.
5. Attitudes as a teacher.
6. Personality qualities, temperament and bearing

7. Practical abilities
8. Physical abilities

The views of the tutors were themselves considered and found to fall into three groups:

1. Those who made special cognitive approaches to the attributes or who had special ways of perceiving teaching ability.
2. Those who considered attributes associated with effectives or interpersonal aspects particularly important.
3. Those who placed special emphasis on the process of developing teaching ability, or on conative aspects of learning to teach.

Whether or not there is a relationship between a teacher's understanding of pupils' behaviour and length of college training was examined by Amatora (1953). Her enquiring involved a total of 485 teachers and 1,542 elementary school pupils and used her child personality scale. Results were tabulated according to the length of college training as follows:-

Group 1.	Reports from teachers with under 2 yrs.in College	(15%)
„ 2. „	„ „ „ „ „ 3 „ „ „	(20%)
„ 3. „	„ „ „ „ „ 4 „ „ „	(45%)
„ 4. „	„ „ „ „ „ 5+ „ „ „	(20%)

An analysis of the reports indicated that the larger the period of college training the greater the degree of teacher understanding of pupil behaviour : the least educated produced critical comments about their pupils most frequently.

As Amatora demonstrated a relationship between the duration of training and the way in which pupils' performances were perceived, so Reed (1953), using data from a residential group of 104 from an actual sample of 160 teachers, concluded that the most effective teachers, as assessed by scales administered to pupils and

administrators, were those who scored highest on a sentence completion test designed to measure "acceptance of self". The correlation between this attitude to oneself as a person and the other measures ranged from 0.66 to 0.76.

Ryans (1953) used a variant of this approach in an examination of the viewpoints of 213 elementary and 338 secondary teachers, including approximately one-third who were training for work in these schools. Two 20 item questionnaires were administered and the items analysed by correlation for each group and by two factor analysis with a selection of the items.

Six oblique factors were extracted from the elementary group's data but only two had significantly large loadings. These were identified as :-

1. Factor 1. Emphasising the academic functions of the teacher - a belief in the importance of 'fundamentals'.
2. Factor 3. "a 'traditional' subject-matter curricular emphasis," and were correlated 0.44.

The secondary sample's data also produced six centred factors but the oblique factors extracted as a result of relation to simple structure proved even more ambiguous. Ryan's general conclusion as far as the items included in his study went, was that a major opinion continuum is that along which teachers opinions may be placed according to the proclivity of the teacher -

"to associate himself with so-called 'modern' education viewpoints as contrasted with viewpoints that sometimes have been called traditional."

This concern with the apparent dichotomy between the conservatives or traditional and the modern or progressives is one which has attracted increasing alteration from experimentalists in education and psychology during the last decade and this trend is reflected

primarily in the researches selected for review in this section.

One of the major difficulties several times previously mentioned is the susceptibility of faking - a point mentioned by Wandt (1954) who in analysing the results of three teacher attitudes scales to selected samples of teachers discovered that the group identified as 'superior' by their supervisors were scored significantly higher (to the progressive end of the scale) on the measure of attitude to pupils and democratic classroom procedures. The obvious problem is how one is to contend with the intelligent sophisticated subject who is not prepared to tell the truth.

Some researches in specialized fields have produced results relevant to our discussion. Thus Oliver (1956) analysed data derived from reports of tutors working with 127 men and 100 women students of physical education. Little sex difference was observed and for the whole group three factors were extracted which were identified as :-

1. A general teaching factor;
2. Personal and emotional qualities;
3. Association with subject matter.

That these factors do not coincide with the recently mentioned traditional/conservative versus modern/progressive pattern should in no way be thought surprising since the analysis undertaken reflects a variety of interests and assumptions on the part of different researchers : the experimental approach to both personality and the teaching complex will, in the long run, probably gain more than it loses from this diversity.

Kissack (1956) examined the attitudes of students in three training colleges to corporal punishment. Sex differences were found indicating that significantly more opposition to corporal punishment existed amongst women than men : there was also far less opposition

in the single sex men's college to the idea of corporal punishment than in the case of the mixed college. In the case of women's colleges, the opposition to this form of punishment was found to be significantly correlated with final marks in both the Practice and Principles of Education.

It is a sad reflection on society that, although no significant difference was found between the groups of students following a training for infant and junior schools, in a follow-up study after 10 months of in-service teaching, significant changes in the direction of favouring corporal punishment were found and these swings were most marked in the case of infant teachers with classes in excess of forty children!

The range as well as the quality of interests was considered by Evans (1957). Using the Final Teaching and Education marks as criteria, no significant relationship was discovered between the range and diversity of interests or the intensity of interest in teaching as measured by a questionnaire administered to forty-one post-graduate teacher training students. Far more worrying is the fact that significant negative correlations were obtained between the measure of interest in teaching and intelligence test results! It seems likely that either the more intelligent had a diversity of intense interests and/or the least intelligent protested their interest in teaching most strongly for obvious reasons.

Thompson (1957) administered a battery of attitude and value scales including ones by Kissack, mentioned above, Oliver, Eysenck and Allport and Vernon's 'Study of Values'. Factorial analysis extracted four significant factors of which the first two accounted for ~~30~~38% of the variance and were identified as :-

1. Tendermindedness verses toughmindedness.
2. Naturalism - transcendentalism factor.

After relation a third meaningful factor interpreted as 'progressiveness' or 'naturalism' in education. Oliver's scale which had an appreciable loading on the first two factors, $+0.544$ and $+0.473$ had the highest loading of $+0.773$ on this factor. The suggestion is, therefore, that these dimensions constitute a persisting structure of attitudes towards education although the analysis technique, based as it is on selected tests constructed according to 'a priori' assumption must, of necessity, reflect the theoretical concepts underlying the original tests themselves.

Walters (1957) in his thesis reports on the relation between G.C.E. passes, interview grades and the performance of students in training. Since the Table of Contents does not describe the contents (It lists 'Section (a) P.15. Section (b) P.26. etc.) and since there is no summary or concluding section it is difficult to see what is achieved, but it appears (P.74) that G.C.E. results are related to College results but at an inferior level to mathematical and intelligence tests.

Steele (1958) also was interested in the 'progressive' versus 'naturalism' continuum and constructed a 58 item scale which was administered to training college students at the beginning, and end, of their two year course, and after six months experience of teaching. All groups were found to move towards the progressive end of the scale during training, although the initial differences persisted, with the infant teachers scoring as more progressive than the junior one. Initially a low positive correlation was found with intelligence but this disappeared by the end of the course while significant correlations were also found between the dimension and final college education ($+0.215$) and teaching marks ($+0.185$). As one might expect from the experience of other researchers, the attitudes of the former students swung back towards the 'traditional' end of the

scale, but after six months, were still nearer the progressive end of the scale than they had been when the students had entered college.

Burroughs (1958) extracted three factors from an analysis of the ratings awarded after interviewing students applying for admission to a postgraduate teacher training course. Estimates of intellectual maturity and of the candidates' powers of self expression were found to correlate higher with final teaching than estimates based on the assessments of the personality qualities thought to be important in teaching. Fuller details of this study are given in Burroughs' thesis (1951) (P. 91 below) the burthen of which indicates that of five factor analyses, at the interview stage the prime recurring forces are centred upon non-cognitive elements which might be reasonably considered as facets of an attitude or attitude-enthusiasm for the job, cheerfulness and pleasantness, sincerity, as well as sensitivity.

The Minnisota Teacher Attitude Inventory described elsewhere and used in the present study (P. 120) was used as part of a battery of tests administered by Evans (1958) to 109 postgraduate students training for teaching. The M.T.A.I. and the verbal and non-verbal tests all were significantly correlated with the criterion of Educational Theory marks in the Final examinations but none were so related to the Final Teaching marks. Since the M.T.A.I. results did not correspond to American or Canadian scores but were significantly related to the non-verbal intelligence test scores, a subsidiary experiment was performed suggesting that subjects may easily raise their scores when they provide false information - a point also made by Sorenson (1959).

Charlton, Stewart and Paffard (1960) carried out a longitudinal study of the attitudes of students pursuing courses of teacher

training at two University institutions and found that, with some reservation, students had favourable views and attitudes towards their Education courses.

Gowan (1958) factor analysed correlations derived from the scores obtained on batteries of attainment, personality and various other scales administered to 1700 students teaching candidates. Thurstone's centroid method extracted six factors from the thirty variables identified as :-

- Factor I Intelligence;
- Factor II Ego sensitivity;
- Factor III "Hopelessness indicator";
- Factor IV A "mystical" factor (with high religious loading);
- Factor V A bipolar verbal-artistic v. mathematical practical factor.
- Factor VI Manic irresponsibility.

When a selection of 20 variables was analysed and rotation to oblique simple structure performed the three, for our purpose more meaningful, factors designated as follows were extracted:-

- Factor I General Teaching Ability
- Factor II Thoughtfulness or anti-delinquency (sic.)
- Factor III General Energy

A reduction of the number of variables to 10 in an attempt to combine factors I and II produced an reanalysis :-

- Factor I General Teaching Adjustment
- Factor II General Energy
- Factor III Status, poise or flexibility.

Gowan then used a second sample of 110 students and eight variables including the M.T.A.I. and extracted the three factors.

- Factor I General Teaching Adjustment
- Factor II Authoritarianism
- Factor III Status.

Freymier (1960) used a sample of 69 teacher college students and 106 of the high school students taught by them for the examination of the attitudes of the two groups as measured by the F. scale (a measure of anti-democratic potential) and particularly to see how well the prospective teachers could succeed in estimating the adolescents' responses.

The scores of the pupils suggested that they subscribed to the belief that "man is basically good", but the students interpreted the views of their charges correctly on an average of only eight out of twenty-seven times for they had a negative estimation of their pupil's perceptions and believed that they saw man as basically bad. Freymier concluded that in this experiment the student teachers were unable to gauge the attitudes of their pupils correctly.

In carrying out a survey of the motives involved in the selection of teaching at the elementary or secondary level, Lang (1960), commented ;

"The findings of studies of teachers' personalities and teachers' classroom behaviour suggest that teaching serves as a distinct outlet for certain psychological needs and these may differ for individuals who elect to teach at the elementary or secondary schools." P.101.

Lang administered a Thurstone type scale of motives for teaching, in which 25 reasons were presented each on a five point scale together with Edwards' Personal Preference Schedule consisting of 210 pairs of statements aimed at measuring fifteen psychological needs based on subjects' self descriptions, to 101 female elementary and 87 female secondary teachers. In both groups socially acceptable reasons were given for selecting teaching but there were some differences characterized as follows :-

Elementary teachers.

"I like working with children":

Manifested greater nurturance :

Manifested lower achievement :

"I like to give and receive love from children."

Secondary Teachers.

"I like the intellectual fellowship of other teachers."

"I like the continuous opportunity to learn."

Sufficient evidence was found for Lang to conclude that his hypotheses were supported :

"The data supports the view that female elementary and secondary teachers differ in some aspects of their personality." (P.103)

Vertein (1961) obtained data from a study sample of 82 students at Wisconsin State College and Institute of Technology. Of this sample 45 were designated from their subject groupings as "non-academic", and 37 as "academic". The information collected was derived from

1. A 19 page booklet on personal-social characteristic, family background and current interest.
2. M.M.P.I's K. score (measuring emotional stability and attitude to the test).
3. M.T.A.I.
4. A 10 item attitude scale on the course and method of teaching.
5. The California test of Mental Maturity.

The only variable which need concern us particularly at present is the M.T.A.I. score which was 15.33 for the non-academic group and 32.03 for the academic group in 1957/58, but whereas the academic's score in 1959/60 was only 0.54 higher at 32.57 the non-academics had almost doubled their original score to 30.25.

There was also a general degree of agreement between attitude, as measured by the M.T.A.I. and Total Grade Point Average with correlation of 0.32 and also with General Education Point Average when $r = 0.36$ was obtained.

Reed (1961) investigated the teacher variables of Warmth, Demand and Utilization of Intrinsic motivation with 1045 pupils taught science by 38 teachers in 19 schools. In spite of differences with respect to certain teachers and schools there was general agreement that, on the basis of a 72 item Science Inventory Questionnaire and a 42 item Teach Behaviour Inventory the majority of pupils agree in their view of the teacher. Furthermore, a positive link was found between the "warmth" of the teacher and the degree of motivation experienced by the pupils.

A study published at the time when this present research was getting under way was that by Freehill (1963) who used contrasting criterion groups. From the records of the Western Washington College of Education the 30 'best' and 'worst' teachers were studied on the basis of :-

1. Endurance test data.
2. College Academic Record.
3. Deans' social and community reports.

The college assessments were then related to 'expert' ratings in the first year of teaching and during the fifth year of teaching. A high degree of relationship was discovered between these later assessments by the school principals and college entrance test scores, academic performance and social participation and attitude with coefficients ranging from 0.52 to 0.90.

To what extent the judgement of experts is in agreement with that of one's fellows is one which is examined in the present research (P. 404). Bentley and Rempel (1963) examined this in relation to a measure of teachers' morale. Five hundred and

seventy teachers in twenty-two Indiana high schools completed a 157 item instrument designed to measure 'morale'. When the scores on this were related to the scores of pairs who were asked to identify 'high' and 'low' morale groups, little correspondence was discovered. But when the scores on the instrument were related to the judgements of experts, generally most of the items succeeded in making a satisfactory discrimination.

An examination of the factors involved in assessing the dimensions of Teacher behaviour, based on questionnaires administered to twenty four evening class teachers from thirteen colleges and Universities as well as to their students, and on analysis of ratings made at two sessions of the classes by trained observers who also had recordings at their disposal was carried out by Solomon, Bezdek and Rosenberg (1964). The eight factors extracted were identified as follows:-

1. Permissiveness v. control.
2. Lethargy v. energy.
3. Aggressiveness v. protectiveness.
4. Obscurity, vagueness v. clarity, protectiveness.
5. Encouragement of (factual) students participation v.
non-encouragement:
emphasis on student growth.
6. Dryness v. flamboyance.
7. Encouragement of student participation v. lecturing.
8. Warmth v. coldness.

The number of teachers in this sample is relatively small and it is possible that the characteristics of a few teachers may have loomed large : a factor analysis ^{was then undertaken} based on a hundred and seventy one prospective teachers' responses to an inventory designed to measure four hypothetical leadership styles. These were designated as :-

1. Impersonal.
2. Self-sufficient.
3. Counselling
4. Integrative

but analysis of 72 paired comparison tests by both principal components and varimax solutions produced a multiplicity of small factors, which suggested that the leadership quality in teaching could not be adequately accounted for in terms of one of the four styles designated.

Since there is a common element in the researches it may be more convenient to discuss that of Sorenson, Husek and Yu (1963) with that of Solomon, Bezdek and Rosenberg rather than elsewhere. In their research Sorenson in all discussed six possible teaching roles :-

- | | |
|----------------------|-------------------|
| 1. Advisor | 4. Motivator |
| 2. Information giver | 5. Disciplinarian |
| 3. Counsellor | 6. Referrer. |

A Teacher Practices Questionnaire was constructed in which thirty problem situations were posed with different solutions representing one or other of these roles. This was administered to 284 prospective teachers and the resulting factor analysis appears to have confirmed most of these categories, except that the first two were eliminated though it was indicated that they might be inter-related.

Amongst the most recent researches into teacher attitudes are those by Burkhard and Tarpey. Sister Burkhard (1965) administered the M.T.A.I. to "30 religious women" (sic. P.228) teaching in parochial grade and high schools who had been rated by their pupils on Amatora's Diagnostic Teacher - Pupil Rating Scale. Little overall general agreement was found between the teachers scored in the extreme categories of high and low on this scale when a comparison was made with M.T.A.I. scores.

Sister Tarpey (1965) administered a battery of five instruments to one hundred and twenty eight students in four training colleges.

These consisted of :-

1. Cattell's 16 P.F. questionnaire.
2. A.H.5. Group Intelligence Test.
3. M.T.A.I.
4. Kuder Preference Record - vocational.
5. Motives for teaching questionnaire.

A variety of relationships was discovered for the various colleges some of which are discussed elsewhere (P. 97). For the present it may be said that in two of the four colleges a significantly positive correlation was found between the final teaching marks and attitude to teaching measured by the M.T.A.I. as follows:-

Coll. 2. N. = 31 $r = + .434$.

,, 3. N. = 39 $r = + .330$

At the same time it was noted that the scores on this scale were lower than those given by the U.S.A. normes.

In Tarpey's study data was collected from several colleges. In a number of other studies of attitudes the same procedure is followed and when possible changes in this are considered, it is fairly general practice to adopt the policy of testing two groups at the beginning and at the end of the course. Although, in terms of experimental design it can be argued that the groups may be randomly selected and hence that, by chance, there should be no differences between them, except that which can be attributed to the effects of the course or other relevant experience ; it would be more accurate to recognize that differences may occur between randomly selected groups by chance, as well as by the effects of the experiences which are hypothetically the cause of the observed differences. Moreover the groups being different in time and space almost certainly experience large differences in treatment, both

in terms of subject content, teaching time and staffing, study facilities and so on.

Butcher (1965) studied three hundred subjects including serving teachers, training college students and postgraduate training department students who were administered attitude scales measuring naturalism, radicalism and tendermindedness in education.

Analysis of the data confirmed the hypothesis that the students as a whole had attitudes which were more naturalist, radical and tenderminded than the experienced teachers although the difference between the training college students and the serving teachers was not significant. The students as a whole appeared to have a looser structure of attitudes as deduced from the relatively low inter-correlation of items in their sample than had the serving teachers who also combined a stricter attitude on moral and disciplinary matters with a more progressive one on questions of curriculum and method.

Butcher also examined changes within the student group in time and discovered that two of the three groups re-tested after a year showed significant changes in attitude towards greater naturalism, radicalism and tendermindedness. Interpreting the results as a whole it is argued that attitudes to education are more closely related to the effects of education, indoctrination and experience than to sex or age. Furthermore, to the sorrow of those engaged in teacher training but confirming what is all too often noted in practice, changes in attitude during training may be reversed after experience of full time teaching.

CHAPTER VI

AGREEMENT BETWEEN DIFFERENT ESTIMATES OF TEACHING ABILITY

Having considered in the previous sections some of the various divergent views expressed about teaching ability and the characteristics of good teachers, as well as some of the various ways in which attempts have been made to estimate this ability, we now turn to studies which have attempted to measure the extent of the agreement or otherwise between the various assessments.

Church (1919) anticipated Vernon (1953) by pointing out that since the teaching situation is a complex one many types of people may be successful in the wide variety of situations which occur in teaching. It is not surprising that we may expect conflicting evidence in this section as well for, as Buckingham (1923) pointed out, many researchers fail to calculate the number of children who are taught well by a given teacher, and moreover this may be a factor which varies from one teacher to another.

Hill (1921) used pupil gain as measured by the increase in standard scores on arithmetic, music and spelling from the first to the second semester as criteria of teaching success. These were correlated with supervisory ratings of 135 teachers and produced coefficients of .190, .240 and .450 for the Detroit, Gary and Winnetka samples respectively. The need was stressed for a cautious approach to the evaluation of supervisory ratings by means of the pupil gain criterion.

Knight (1922) used a sample of 156 teachers in three sample towns of Massachusetts who were assessed by supervisors' ratings as well as by fellow teachers and by a 'consensus of pupils' opinions. Other factors were also considered including such variables as age, salary, experience, intelligence, professional knowledge, in-service further qualifications and even handwriting. Not surprisingly this last variable produced a zero correlation between the composite teaching efficiency measure: the highest correlation was between the same

criterion and the test of professional technique score.

Somers (1923) compared ratings of 110 student teachers assessed by their supervisors while training and after a year of teaching, and related the assessments to results obtained on a battery of Information., Language and Reasoning Tests. A composite of personality ratings correlated 0.62 with teaching efficiency and the college teaching supervisors' grade correlated 0.70 with that awarded a year later. The highest rating of all, 0.77, was, however, obtained between the grade after a year's teaching and the subjects high school marks!

Boardman (1928) repeated most of the details of Knight's (1922) investigation (P.12) but used as his sample a group of 88 high school teachers. As before, the composite criterion of teaching efficiency was used, derived from supervisor, peer and pupil judgements and ratings varying from 0.26 to 0.39 were obtained: The three highest scores were on a Psychological Examination, a Professional Information Test and "a Test of Ability to Discriminate between procedures proposed as solutions of classroom problems in high schools". Boardman (1930) in a follow up study discovered that pupil liking for teachers was the largest factor in determining their judgement of the teacher's work. Correlations showed fellow-teachers and supervisors' ratings in closer agreement than any other measures.

Armentrout (1928) related ratings of 200 students on 16 traits given by their tutors to those given by superintendents after their first year of regular teaching. A percentage of agreement between the two sets ranging from 36.2 to 47.9 was obtained: the average, which is twice the chance expectancy, was 40.8.

Baird and Bates (1929) correlated the ratings on general merit, as well as eight other characteristics obtained from school principals, for 571 teachers with measures of reading growth of their pupils on standard reading tests. Although there was a high general agreement of the order of 0.500 or higher between the general merit rating and

the other ratings, the correlation between general rating and the pupil measures were only 0.135.

In his first reported research Shannon (1928) undertook a very extensive search for the characteristics of good teachers by analysing data derived from the following:-

1. Interviews with 97 supervisors covering the best and worst student ever supervised.
2. Student opinions on qualities of best and worst teachers.
3. Traits on 72 rating scales.
4. 5 sets of recommendations and recommendation forms.
5. Studies related to teacher failure.
6. "Traits considered in state certification plans, tenure laws and contract blanks".
7. Codes of ethics for teachers from 27 state teachers' associations.
8. Supervisor opinion of student teaching by questionnaire.
9. Supervisors' notes.
10. 73 traits classified by competent judges.
11. Reports by competent judges, teachers' self ratings and parents' idealized teacher images.

In spite of a considerable amount of disagreement in the variables, a few traits were discovered to occur in nearly every study as desirable qualities: these were followed by a second list which were a little less frequent or highly valued.

- | | |
|--------------------|---------------------------------|
| 1. Sympathy | Enthusiasm |
| Judgement | Stimulative power |
| Self control | Earnestness. |
| 2. Affability | Attention to own use of English |
| Industriousness | Accuracy |
| Voice adaptability | Alertness |
| Forcefulness | Integrity |
| Co-operativeness | Reliableness. |

Shannon continued his persistent researches, certainly up to 1948, but to refer to all his work would occupy too much time and space since most of his work falls into the same general category of 'qualities of best and worst teachers' described above. Before leaving his work, it may be of particular interest to refer to his study of expert selection.

Shannon (1934) carefully selected ten administrative officers, professors and psychologists who were asked to select prospective teachers of merit. Neither visual inspection of the subjects nor a personal interview with them was found to enable those who received highest marks in practical teaching to be selected.

Flory (1930) extracted 25 personality traits from those put forward by 370 students as being the traits of successful teachers: when these were administered to 124 teachers to rate themselves on, a correlation of 0.52 was obtained with an average rating from 5 fellow teachers for each teacher.

In a descriptive study reported in the same year, Light (1930) found that the general ratings of 900 pupils for the best and worst teachers, after these had been ranked in order of merit, were substantially in agreement with those given by the school principal and superintendent. A similar kind of general statement, but this time in favour of pupils' estimates, was made by Flinn (1932) when she compared the assessments of 8 groups of students of their teachers with those of 4 principals and concluded,

"The graphs seem to prove that the pupils' honest opinions are often a better basis for (a teacher's) self-study.....
.....than are the opinions of a few supervisors".

An investigation cited by Ullman (1931) compared the ratings of competent judges (superintendents, principals or supervisors) for students in training and after at least one year's teaching. The correlation between the in-service grade and the student teaching mark was 0.36: between the former assessment and both the academic

mark and 'professional mark' the correlation was 0.30 while with the intelligence test score it dropped to 0.15.

After a number of previous attempts Betts (1935) published findings in support of a measuring system devised to assess the N S trait: this was described as "the difference between novice and superior teachers as measured by a battery of tests validated by data derived from a pair of contrasting criterion groups". The pupil achievement of 1214 pupils was correlated with the N S trait measure of their 54 teachers and, when the initial ability and age of the pupils was held constant, the coefficient was nearly six times its probable error.

Another researcher with an enormous number of publications to his credit is A.S. Barr. In one of his earlier studies Barr (1935) (not his earliest since there were nearly half a dozen in the previous decade!) investigated, among other things, the relationship between a variety of predictor variables, numbering in all 19, and 4 criteria given as composites on each of the following:-

1. Stanford Achievement Test:
2. Superintendent ratings of Teachers:
3. Teacher scores on 9 measures of qualities generally related to teaching success:
4. "A composite of these composites".

The correlations obtained were generally low and ranged from .35 down to 0.

A summary of studies carried out under the general direction of Professor Barr (1945) was followed by a broader review of the whole research field of teaching efficiency, Barr (1948). Nevertheless, most of the studies failed to yield a consistent pattern of agreement

between measures or were frequently concerned with only one aspect of teacher performance and did not look for this agreement. Without spending any more time we can note that Barr changed his ground, certainly in so far as his emphasis lay, as his experience of the field deepened. Then, in 1935, he said,

"Changes produced in pupils, measured in terms of the objectives of education, is the ultimate criterion of teaching success".

(Domes & Tiedeman 1950. P. 111)

By 1947 the assessment of teaching success was qualified by the assertion that

"We must make some assumptions... (about pupils and aims in education as well as about the school and the teacher's contributions)... and from these work around to some definition of teaching efficiency and the prerequisites to efficiency."

(Barr, (1947)

An indication of the area in which he was now thinking of framing his definition was given in his statement of the previous year, made in one of his reviews of the literature in the field,

"The soundest measure of teaching efficiency with probably be found in the measures of the effect of teacher activity and leadership."

(Barr, 1946)

Not surprisingly higher agreement has been found when less objective measures than pupil gain are used for comparison purposes. Thus Shannon (1936) found agreement on the Teaching efficiency of 111 teachers to range from 0.29 to 0.97 when they were rated in groups by informal means and by a score card method, and when both these and other assessments were made by graduate student observers.

In the study previously alluded to above (P.21.) Bryan (1937) compares the ratings given to teachers by pupils with those of administrators.

"These revealed that:

- (a) the average ratings of groups of pupils are much more reliable than the ratings of a few administrators;
- (b) the amount of agreement between the ratings of senior high school pupil groups and administrators seems to exist in proportion to the degree of personal contact that the administrators had with the teachers and pupils;
- (c) On three items out of five, the average ratings of the junior high school principal and assistant principal agree more closely with the average ratings of the pupils than the ratings of the principal agree with those of the assistant principal;
- (d) Administrators show more inclination than pupils to rate the same teacher about the same on all items."

In an experiment to discover whether students' observations and ratings of experienced teachers might assist the students in their preparation for teaching, Hulse (1940) found a reliability in the ratings given on two occasions of the order $r = 0.75$. While there was also general agreement between the ratings of the teachers given by the students and administrative officers the ratings of pairs of students for the same teacher were as high as 0.863.

Considerable mention has already been made of early studies (P. 17) which canvassed pupil opinions and set these against those obtained from other sources. Such a device is often useful as part of a study. Albert (1941) devoted attention to this topic and canvassed 1528 pupils in San Antonio, Texas. They were asked to name the best liked and most beneficial teachers and to list their qualities. These were found to vary slightly but were, nevertheless, substantially in accord and were found to be reliable. At the same time they differed considerably from administrators' opinions which Albert argued was all the more reason for using those of pupils.

Flanagan (1941), like Albert, considered the views of pupils but was particularly concerned with relating supervisor ratings to Teacher scores on the National Teachers' Examinations. These assessments for a group of 49 teachers were found to produce a correlation of .51 which is significant beyond the 5% level. On the other hand, Ferguson and Hoyde (1942) concentrated on studying the effect of pupil opinion of teachers. A teacher was rated by his pupils and colleagues on twelve personality traits including speech and mannerisms. Age did not appear to influence the ratings to any considerable degree, but fellow teachers tended to have a slightly better opinion of the teacher than did the pupils.

Using a rating scale to evaluate the pupil-teacher interaction Brookover (1940) obtained a correlation of 0.39 when this was related to the pupils' opinions of the effectiveness of their teachers' work. However, when the pupils' opinions of their teachers were related to those of administrators for the same teacher no significant correlation was found ($r. = 0.078$).

In a subsequent investigation, Brookover (1945) analysed the teaching ability of 66 history teachers in terms of pupil gain, superintendent's ratings, teacher age, teacher attitude and community role. Although none of the measures of the community role of the teacher was related to pupil gain those with the highest pupil interaction produced the least gain! Neither the teacher's attitude nor the views of superintendents regarding the quality of the teacher appear to be related to pupil gains in information. Most gain was produced by teachers up to the age of 38 and there was some inconclusive evidence to support the idea that pupils' views of a teacher's effectiveness are related to their own achievements.

An interesting point regarding the inter-personal relationship in evaluating teaching is brought out by Bush (1942) and Porter (1942).

In the former study 9 social studies teachers were rated on a ten-point scale by their 148 pupils as well as by their superintendents. There was a generally high agreement between the two groups but one teacher was rated exceptionally low by one student and the point was made that

"There is a need for placing an individual student with a teacher who is best qualified to meet the student's need and with whom the student has most in common".

In Porter's study, practice teachers were scored on a check list by their pupils and supervisors. Generally there was good agreement between the views of the two groups, but the widest measure of disagreement was found with regard to teachers who were neither outstandingly good nor obviously weak in their teaching performances.

In reviewing the literature in this field, it is interesting to note the various factors which have attracted the particular attention of individual researchers as, for example, in the case of Henrikson (1943) it was the teacher's voice. In this study, teachers were rated by both a public school supervisor as well as a 'supervising critic teacher' on their voice quality as well as their teaching ability. The correlation between the two estimates of voice was 0.20 and for teaching ability, 0.34. That halo effect was present is suggested by the fact that the critic teachers' ratings of the two ratings reached 0.62, while for the supervisors it was as high as 0.58.

Against this we may quote Jayne (1945) who found a considerable source of variation when supervisors verbal records were analysed: not only were they unreliable, but they had a low or even negative correlation with other criteria such as pupil gain. (The point has been made elsewhere that teachers who transmit most information are not necessarily considered the best by supervisors or pupils. (See Brookover (1945), P. 77 above.)

Attention has also been paid previously (P.32) to the factors which may influence the pupils' gain of information apart from that which can be attributed to the influence of the teacher. Following the submission of his Doctor's Thesis in 1939, Rostker developed his thinking until he produced "a method for measuring teacher efficiency in terms of the portion of the gain in pupils' achievement which is independent of pupil differences in factors thought to affect pupil gains", Rostker (1942). Three years later the experimental conclusions were published. Supervisors' opinions of the teaching ability of 28 seventh and eighth grade teachers were correlated with adjusted scores obtained from 375 pupils on achievement tests. ("These adjustments were made on the basis of pupil differences in initial achievement, intelligence and socio-economic status by means of multiple regression.") (Rostker (1942)). Further measures of intelligence, achievement, attitude, adjustment and professional information were also made. Amongst the conclusions drawn were the following: Rostker(1943).

1. The intelligence of the teacher is the highest single factor conditioning teaching ability and remains so even when in combination with other teacher measures.
2. The social attitudes of social studies teachers is an important factor in teaching ability.
3. Teachers' attitudes towards teaching is significantly correlated with ability.
4. Knowledge of subject-matter and ability to diagnose and correct pupil mental maladjustment are each significantly associated with teaching ability.
5. The correlations between supervisory ratings of teachers and gains by pupils' scores are statistically insignificant.
- And 6. Personality, as defined and measured in this investigation, shows no significant relationship to teaching ability.

Also working in Wisconsin and using similar measures to Rostker, Jones (1946) also failed to obtain a significant correlation between pupil gain measures and principals' ratings of teaching ability and found that "the rank in high school class is the best predictive measure of residual pupil gain".

Likewise Gotham (1945) in the study previously alluded to (P.29) had failed to discover significant levels of correlation between assessments of 57 rural school teachers on ratings of qualities of teachers, obtained in a number of ways, and pupil change in relation to the teaching of citizenship.

Further reference is made elsewhere to the Minnesota Teacher Attitude Inventory used in the present investigation (P.120 and 106). In a report on their work on its construction Cook, Leeds and Carroll (1947) described how after two samples of 100 teachers, selected as contrasting criterion groups on the basis of their principal's judgement of the quality of their working relations with their pupils, were used to select the items for the complete inventory, the scores obtained from a third sample of 100 teachers were correlated with ratings of the effectiveness of the teachers made by their pupils, principals and Leeds, producing the following results:

Pupils	.46
Principals	.45
Leeds	.49

When combined with equal weights, the correlation of the composite judgements with the inventory was 0.60. The suggestion being, therefore, that there was an instrument which agreed with other general assessments of teacher efficiency at a high level, a general conclusion which has not been borne out by most subsequent research, as witness Evans (1958) and the results of the present investigation support. At the same time some of the reports are not conclusive for some researches find the M.T.A.I. does provide useful information e.g. Herbert and Turnbull (1963), but the doubt remains for Tarpey (1965) found a positive significant

correlation in only two of her four sample schools between the Inventory and the final teaching marks.

Figure 11.11 is comparing the results obtained from the

Administration of the Teaching Activities Tests obtained a correlation of 0.34 between the Total Activity score on the Merrill-Katz Index and the total activity score on the George Washington Teaching

CHAPTER VII

INTERPERSONAL TEACHING RELATIONSHIPS

Some years ago during a seminar discussion a mature student recounted an experience with a commercial organization in which he discovered that former teachers were much in demand as company representatives, not because of superior education, for training college students were, along with other teachers preferred over all other groups. It appeared that this company saw the two processes of selling and teaching as similar in that both involved personal relationships and more specifically that, as the salesman must 'sell' himself before he can dispose of his product, so the teacher does the same before he can extract or impart information or build attitudes, etc., etc.. Leaving aside the ethics of poaching on trained teachers by commercial concerns the writer believes a vital point is stressed by this account. It emphasises the central role of a teacher as a person acting in relation to other people and this holds true in whatever role he discharges this function.

The relation between various assessments of teaching ability and measures of social relations or of personal qualities regarded as important in social relationships, has been explored by many researchers since the beginning of the century and it is not proposed to reconsider researches previously discussed under other headings. The majority of these studies obtained a measure of positive agreement between the assessments of social characteristics and of teaching performance: thus Panton (1934), obtained a coefficient of correlation of 0.32 for measures of sociability and teaching performance. (This is significant beyond the 5% level.)

Stumpf (1937) in comparing the results obtained from the administration of two Teaching Aptitude Tests obtained a correlation of 0.54 between the Social Attitude score on the Morris Trait Index L and the social attitudes score on the George Washington Teaching

Attitude Aptitude Test suggesting that social attitudes could be successfully identified and measured. It is a common experience for most people concerned with education to have come across the brilliant scholar who cannot get along with people either in personal relationships or in professional teaching relationships for the latter usually does involve, with the possible exception of the formal lecturer, some degree of personal involvement with students. Jackson (1940) went so far as to maintain that "in teaching rather than in any other profession, people of mediocre intelligence are more successful than those of higher intelligence because of their greater social proficiency."

The degree to which relationships between teachers and pupils influence the latter group was examined by Flory, Aldren and Simmons (1944), when a group of twenty-three children of normal intelligence and achievement but who were diagnosed as maladjusted were placed in the care of their teachers for a two year period. At the end of this time eighteen were found to be markedly improved with the more intelligent having made the greatest relative improvement: the clear suggestion in this being that the improvement was produced to a considerable degree as a result of the stabilizing influence of the teachers - a conclusion with which Eysenck would probably disagree since a similar degree of improvement might have occurred without placing children under the care of their teachers during the two year period. (cf. Eysenck (1953) P. 198-9)

A number of experiments have examined the relationship between pupils and teachers along the lines that "Attitudes are caught rather than taught". Perhaps the most often quoted study in this connection is that carried out by Lewin, Lippitt and White (1939), on the influence of adult control of three types on three club groups of five to ten year old boys: These were termed "authoritarian" "democratic" and "laissez-faire". In the presence of the leader the first group split

into those who were dependent and apathetic and those who displayed more hostile and aggressive action, while in the presence of the second type of leadership there was accomplishment and a sense of harmony. The laissez-faire group displayed a sense of frustration and lack of accomplishment which became acute when the group was left alone and the lack of momentum was also obvious when the authoritarian leader was absent while the democratic group continued to be actively productive whether or not the leader was present.

Anderson (1943) studied teacher behaviour in a number of situations before concluding that it could be classified into two broad categories:-

1. integrative or learner-centred and democratic:
2. dominative or teacher-centred and authoritarian.

When children were exposed to the former kind of teaching situation they tended to behave in socially integrative ways themselves and scored higher on a 'mental hygiene' scale than children exposed to the latter teaching situation.

In a later statement, Anderson (1959) evaluated the results of studies of thirty two leadership patterns in teaching and reported that eleven indicated that greater learning was obtained from the integrative learner-centred situation; eight that best results were obtained from the dominative situation and thirteen that there was no significant difference.

While it is clear that when the criterion is learning achievement, it is almost impossible to control all other factors except the variables of teacher-pupil personality, and it is also evident that those two have a complex casual connection and interact with each other.

Estimates of social adequacy have frequently been included in studies of teaching ability or have been appended to factors extracted from analyses of teacher ability tests, as in the case of Hellfritzch

(1945), who identified the third factor extracted which accounted for 9% of the variance as "personal, emotional and social adjustment". Ryans (1951) likewise obtained a factor identified as "teacher sociability" from the correlations of the Thurstone Temperament Schedule with ratings of Teacher effectiveness. An example of an examination of the measure of social adequacy by means of ratings is that of Von Haden (1946) who obtained a correlation of 0.323 between these and other ratings of teaching efficiency which is significant beyond the 5% level. At the same time it is not surprising that Lovell (1951) later found evidence of halo effect in such trait ratings.

The demands made upon the teacher's nervous energy by teaching large classes have to be experienced to be believed and it is interesting to recall that in the Study by Champ (1948) the most frequently given reason by women for withdrawing from teaching was the dislike for dealing with people in the mass. Halmos (1950) obtained a similar result from his study of students when he found a positive correlation between neuroticism and restricted social participation.

The extent to which a teacher feels to be succeeding is largely determined by his interpretation of the response produced by his impact upon the pupils, or others, able to judge his performance: this indeed is one of the criteria of occupational success given by Davies (1950).

Symonds (1950) argued that there was no 'best' kind of teaching personality and that different situations would affect the issue. At the same time the least successful teachers were found by Symonds to be so, ^{when} neurotic or maladjusted, while the most successful appeared not only most stable and secure but were outward going in their personality make-up with an interest in and an affection for their pupils. Lassike (1950) agreed arguing that the successful teaching personality depends upon a balance of qualities rather than upon particular individual traits.

Baxter (1950) like Anderson, above, found pupils tended to model themselves consciously or unconsciously on their teachers, so that these working under efficient teachers tended to become more methodical and orderly while the charges of inefficient teachers did not develop these desirable qualities.

During the last decade or so there has been increased stress upon developing the social qualities of student teachers as being an essential part of the teaching personality complex. In an extensive study of the main forces operating at the interview stage for entry to teacher training Burroughs (1951) identified one of the factors extracted from five factor-analyses as "Acceptability at School" which was described in the ideal of the "modest hero" popular with both his fellows and staff, who actively participated in social activities rather than being passively involved in them. Swainson (1952) argued the need to assist the student teacher to achieve emotional maturity and help him move free from family ties and to become capable of relatively independent living and of behaving satisfactorily as an authority or parent substitute himself. She further argued that one way of producing the desired result is to engage the student teacher in a leaderless group engaged in some project or practical activity so that "In such a co-operative group neurotic traits born of a competitive environment are allowed to die away..."

Tibble (1953) likewise argued the benefits that would accrue from the tutor giving up his leadership in a group discussion:

"There is no doubt at all that groups with a democratic (which does not mean laissez-faire) structure provide opportunities for relatively rapid maturation of members. Furthermore, the insights so gained can be directly applied by the student in the school and classroom situation".

Going further he later argued, Tibble (1954), that the interpersonal group relations developed in such a setting may enable the students to

overcome problems in learning which in time should give insights into the problems pupils might encounter in learning. Small groups might even be used as a form of mild group therapy for teacher-training students. They also have the advantage according to Tibbles (1959) of enabling students to understand more closely the dynamics of interpersonal relations, although this does depend to a considerable extent on the tutor's capacity to play other than instructional roles.

To break with the pattern of most of this thesis, the following quotation is given at some length because it gives so succinctly the situation facing the teacher:

"Faced with children, the teacher meets himself. It is during that encounter, whether sudden or gradual, that he beholds in the mirror made for him by the class, not the reflection of his outward form to which he has become more or less accustomed, but his overall identity. As this has previously been largely inaccessible to his consciousness..... the experience comes as a bit of a shock. The intending teacher must learn how to adjust to it".

Henderson (1957)

The degree to which colleges assist their students to overcome these problems is to some extent a measure of their success.

Cogan (1958) sought to investigate the relationship between certain specific observable behaviours exhibited by teachers and the amounts of work performed by their pupils. Data was obtained from five principals, thirty-three teachers and nine hundred and eighty-seven pupils and the main conclusion was that "in the perception of the pupils, inclusive (integrative" A.G.J.) behaviours of the teacher are positively related to self-initiated work". (P.90)

The report goes on to indicate that reliance can be placed upon statements made by pupils regarding their performance in school.

Attention has been directed of recent years to an examination of the foundations of a teachers' influence in relation to his pupils.

French and Raven (1959) defined five sources of this power as follows:-

1. Coercive: based on the pupils' awareness of the possibility of punishment.
2. Reward: based on the pupils' awareness of the possibility of reward.
3. Legitimate: when the pupil accepts the authority and influence of the teacher over him as proper.
4. Referent: where the pupil for a time uses the teacher as a model.
5. Expert: when the pupil is influenced by the expertise of the teacher as a master of the subject.

Alden (1959), reported by Kounin et al., (1961), manipulated the last two named sources of power in relation to a rebuke delivered to planned misbehaviour in a class so that rebukes were either task-orientated or teacher based. It was found that the former rebukes produced the most positive reactions and that generally the highest productivity and most favourable responses came from children taught by the "Expert power" based teacher who used this type of comment on misbehaviour.

Rosenfeld and Zander (1961) also investigated the effects of different forms of teacher power with 400 students with reference to the perceived level of performance and the level of aspiration. It was found that students responded to all forms^{of}/teacher power except indiscriminate coercive power, which is interpreted as teacher disapproval when the student feels he is being admonished whilst performing up to his maximum. Teacher behaviour interpreted by the student as being based on coercive power caused the greatest disparity between the students' level of performance and aspiration with the score in the negative direction.

Crabtree (1961) reported by Eson (1965) arranged two types of class structure, one essentially teacher centred the other pupil centred,

and used the criterion of pupil gain with rotation of groups. It was found that convergent thinking or the ability to recognise the usual best answer occurred far more frequently in the teacher centred situation than in the pupil centred one: divergent, creative or original thinking was found to occur in pupil centred classes more frequently than in teacher centred ones. In each case the ratio was about 3.1 of the observed thinking responses.

From the review of these researches it might appear that there is a direct, simple and unequivocal link between the teachers and pupil's behaviour patterns. Unfortunately, or perhaps in some cases, fortunately, the relationship is complex and reference to a slightly older study than those most recently discussed may be sufficient to make the point.

Keislar and McNeil (1959), studied a sample of forty student-teachers engaged in teaching spelling by one or other of two methods. The pupils had been previously approached by the investigators and were co-opted as conspirators with the task of showing preference for one or other of the two methods involved in the experiment. In spite of the fact that the pupils responded as required, most of the teachers were influenced with regard to the methods far more by the pupil's spelling performances than by their assumed enjoyment or otherwise for a particular method.

The trend today is clearly towards making the teacher have a concern for his pupils "in the round". As Kitson (1962) argued in a recent M.A. thesis,

"Teaching is a pastoral professional, therefore an effective teacher is not only responsible for the training of the intellect, but also for caring and looking after persons. Because of this therefore, it is necessary for the teacher to be equipped with a highly cultivated understanding of the way people feel and behave, as well as the way people learn and think". (P.30)

CHAPTER VIII

THE SELECTION OF STUDENTS FOR TEACHER TRAINING

Whilst there is little contention about the need for a process of selection for entry to any scheme of preparation for teaching, there is little agreement as to the form of the selection or, when there is a measure of agreement with regard to certain instruments, with the manner in which they should be used and the reliance which should be placed upon data derived from them. The best known example of this is the interview but the value of academic results or personality assessments are about as contentious: The interview differs from most of the other possible methods of selection in that most responsible opinion tends to place some reliance upon one or other method of face to face assessment and regards it as an essential element in the process. It may well be that, in part at least, a minimum level of academic attainment is required by colleges before applications can be considered and that the interview itself is able to assess at least the outward aspects of the candidate's personality. (The problems arising from this are dealt with elsewhere).

Using a fairly small sample of 49 men students, Panton (1934) obtained ratings on a number of qualities including speech, personal appearance, initiative, leadership, sociability and humour, and correlation coefficients with teaching marks ranging from 0.32 to 0.67, although different means and distribution were obtained from different colleges. Without going further back in the literature in this section since selection cannot be assessed except against some criterion and both the criteria and methods of assessment constitute the main theme of the entire section, it may be readily seen that this is fairly typical in that most reasons selected as hypothetical predictors of teaching success, whenever these are made on a common sense basis, tend to produce positive but low and frequently insignificant correlations. Even when a statistical level of significance is obtained the coefficient

of alienation generally indicates that the relationship is far too tenuous for any practical reliance to be placed upon it.

In reviewing the literature relating to the selection of teachers Archer (1946) notes definite trends ^{towards} recruiting individuals who are considered to have the intellectual and personal qualifications of good teachers as well as the use of personality as a criterion of teaching success. The actual process of selection is generally considered in relation to a group which has already been selected and most research programmes consider the data derived from selection as one of a considerable number of elements in the research design. Burroughs (1951) concentrates upon the single element of selection and points out that the forces operating may be considered according to:-

1. The people being selected
2. What they are being selected for.
3. The means used to select them.

As well as reviewing the literature relating to assessments of teaching ability in terms of those such as Cattell, Barr, Eliassen and Martin, Rostker, Bishop, Lewis and Von Haden who have looked at traits necessary in a successful teacher - those like Tongerson, Barr and Brookows Tongerson and Lewis who used tests and those like Burt, Cattell and Eysenck who have sought to break personality into elements which could be used in selection - Burroughs also considers the handful of studies of teacher traits which have used Factor Analysis. After reviewing methods of selection generally he concentrates upon the interview as the main theme of his study.

It is not proposed to cover in detail all the ground covered so thoroughly by Burroughs in studying the interview as a means of selection, for his review ranges from Hartog and Rhodes' demonstration of the fallibility of experts at University level to Newman, Bobbit and Cameron's work on selecting prospective coastguards and Rafferty

and Deemer's factorial analysis of psychiatric studies of 389 flying cadets. At the same time it would be invidious not to look in some detail at the experimental work carried out by Burroughs himself on the selection interview for entry to the course of professional training at Birmingham.

The established pattern was for panels of interviewers to rate applicants for twenty minutes on a collection of twenty traits, each on a five point scale. These were as follows:-

- | | |
|------------------------|--------------------------------|
| 1. Interests | 7. Powers of Expression |
| 2. School Activities | 8. General Appearance |
| 3. Physical Activities | 9. Personal Adjustment |
| 4. Physical Bearing | 10. Adjustment to Interviewers |
| 5. Dialect | 11. Sense of vocation |
| 6. Voice Quality | 12. Suitability for Teaching. |

In the initial analysis data from 420 applicants was taken normalized and a centroid analysis undertaken. After rotation, three factors were extracted:-

- I The externals of personality or culture (5,8,6,4,);
- II All round Teaching Suitability (10,12,7,11,1,9,);
- III School and class Activities.

Data derived from headteachers' reports on 196 applicants to the University training department in 1961 was also analysed and from the eight categories three factors were again extracted, identified as:-

- I Well balanced athletic and social type.
- II Leadership aspect of teaching.
- III Well-balanced intellectual type.

When a further analysis was carried out on the data derived from three cognitive tests 4 main orthogonal factors emerged and 1 minor one.

These were labelled:-

- I Interview performance
- II Head Teacher's Report Performance
- III Test performance
- IV Social Acceptability
- (V Emotional and Physical Balance)

It is interesting to note that only in Factors IV and V was there any overlap between Headteachers and Interviewers and this was mainly where attention was devoted to the externals of behaviour and appearance: the mental test performances failed to overlap anything.

Burroughs then proceeded to develop his study by concentrating on further factorial analysis of data derived from interviewing 6 candidates in turn by each of 6 interviewers and from a battery of tests, examination results and miniature real life paper and pencil tests.

In concluding his analysis Burroughs indicated that the main forces operating at the interview stage were:-

1. Estimates of teaching ability : based on non-cognitive traits : enthusiasm for the job, cheerfulness and pleasantness, sincerity and sensitivity.
2. Superficial aspects of personality resulting from local culture : speech, manner and appearance.
3. Acceptability at school : the good mixer and social companion - not simply one who participates; the 'modest hero' well liked by fellows and staff.
4. Performance on tests : provides different evidence from the interview or Head's report.
5. Maturity and scholarship : which appears to be a minor determinant of teaching suitability.

During these experiments the usual trends were observed : the tendency to rate towards the more favourable end of the scale and in the case of the assessment of suitability to produce a bimodal distribution by rating the 'good as better : the bad as worse'. There was also much closer agreement within interview panels than between interview panels with regard to the merits of any particular candidate. In explaining this Burroughs (P.182) draws on Lewis's conception of a field of forces and this is created whenever a

candidate appears before an interview panel :

"The candidate's behaviour which is a clue to his personality is largely a product of the situation in which he finds himself and different aspects of it in different situations may similarly appear unrelated."

Skinner (1947) had likewise concluded from his "Investigation of Factors useful in predicting Teaching Ability" that "Personality appears to be the most important central factor to be estimated in predicting teaching ability". (P.82). In his investigation, 125 R.A.F. personnel training under the Educational and Vocational Training Scheme in 1944-45 were measured on 35 qualities and factors by means of individual interviews, group tests and rating scales of whom 50 completed the whole series. Twenty 'factors' were found to have a significant correlation beyond the 5% level with r 's ranging from +0.347 to +0.721 for subjects numbering between 50 and 112 with the mark of teaching ability of the short course R.A.F. Education and Vocational Instructors Training school being taken as the criterion. Conclusions derived from factor analysis of the coefficients included the following :-

"This total teaching personality may conveniently be recognised as comprised of two constellations of personality traits, of which the primary group centres around initiative, self confidence, adaptability and group activities, while the secondary involves responsibility, energy and perseverance." (P.82)

The first group of traits was thought likely to correlate higher than + 0.6 with future teaching ability : the latter group +0.5 with the same criterion. With regard to the single traits of personality considered, initiative and self confidence are singled out for special mention as being the most valuable for forecasting teaching ability, while leadership, rather than wide participation in group activities, is considered to be a useful indicator. Whilst 'intelligence' in a group already selected academically does not appear to play an important

part in predicting teaching ability", (P.83) educational achievement - assessed by the interviewer - is considered likely to prove at least of equal importance to the secondary constellation of personality traits in forecasting teaching ability. The interviewer is also seen as able to produce a useful indicator of the ability from assessing the candidate's speech.

Thus, the interview is found by Skinner to be useful in predicting teaching ability if it is used to assess general speech, educational achievements and personality : when suitably weighted $r = 0.62$. When the number of trait ratings of character and leadership is raised to 10 then the r with teaching marks becomes $+ 0.74$.

The point made by Skinner regarding the intelligence of a selected group not contributing very much to an estimate of teaching ability is made by a number of other researchers including Lovell (1951); Vernon (1939) found little relationship between teaching skill and verbal and non-verbal intelligence scores, whilst Pemsett is cited by Lawton (1939) as failing to find any significant connection between either abilities as measured by intelligence tests or academic records and teaching grades of University students. Yet in his own study Lawton obtained an $r + 0.48$ between academic examinations and teaching grades, attributing this, speculatively, to intelligence, perseverance and specific interest amongst other reasons.

Phillips (1953) examined the relationship between Intelligence scores, English scores and those on a personality test of his own construction, derived from a sample of fifty six students. Only two of the resulting six intercorrelations with the teaching mark were found to be significant : the Intelligence and English scores $r = 0.679$ and, contrary to the experience of most researchers, a correlation of 0.505 was obtained between the Personality Test and Teaching Score.

The explanation for the high 'r' for the last two variables is given by Phillips in that the score is an indication of a "teaching personality" not a measurement of individual traits as used by most other researchers. (The personality score is derived from subjective classification into three categories of responses to ten (later 9 only were used) questions relating to a visually perceived stimulus :- a picture of "A little boy with books seated alongside a pool and a young man seated with coat and books on a book-case").

When the combined battery, after weighting was used, a significant improvement in correlation was found over the use of the Personality Test alone. (See also p.52 et seq.).

It is widely recognized that when a given group is selected, its performance is likely to vary considerably : not only do some whole year groups perform below and others above expectation, within the group, individuals are likely to excel whilst others will do poorly. Using this fact Mann (1961) took two contrasting criterion groups of 40 at the extreme levels of performance in both teaching practice and academic success and examined them with regard to a considerable number of variables. These were grouped under the following five main headings :-

1. Home Background, health, physique.
2. Educational Background.
3. Personality.
4. Social Factors.
5. Academic and teaching performance in college.

Despite the fact that the groups were homogenous in so far as they were training college applicants and expected to have a high level of academic attainment, as measured by school reports and G.C.E. examination results, as well as being screened by reference to records and testimonials from heads and being personally interviewed -

"Despite these carefully considered and controlled measures one of the many problems facing those responsible for the selection and training of teachers is the wide variability in the level of performance of students in both academic studies and practical teaching during the college course."

In this investigation Mann discovered no less than 67 variables in which the two groups were significantly different.

A more profound and far reaching investigation with a sample of 100 students at Manchester University Department of Education during 1957-58 was undertaken by Warburton, Butcher and Forrest (1963). Data was collected from a range of measures of abilities, personality, interests, values and general culture and related to that derived from college results in theoretical and practical work. In all 57 test scores, 25 sets of biographical particulars and 18 criteria of success were used. Yet of the 177 correlations between the test scores and the 3 main criteria only 22 (13%) were found to be significant.

In this study academic performance as measured by degree class was found to be the best predictor of the final theory mark and of the final certificate grade (as measured on a five point scale); positive correlations at a significant level were obtained with final theory results for each of the following groups of variables :-

- | | |
|--------------------------|-------------------------------------|
| 1. cognitive test scores | 4. attitudes |
| 2. personality measures | 5. attitudes to education measures. |
| 3. studies of values | |

The only successful predictor of Teaching Ability was on Cattell's 16 P.F. questionnaire.

Self Control Q.3.

Conscientiousness G.

Sensibility I.

It was this instrument, moreover, which alone predicted teaching results better than theory ones.

Another research to concentrate upon "Personality Factors in Teaching Trainee Selection" is that of Tarpey (1965) although the

students had already been selected as in the majority of the other studies. A total of 128 students drawn from 4 training colleges completed a battery of five tests. These were :-

1. Cattell's 16 P.F.
2. A.H.5. Group Intelligence Test.
3. M.T.A.I.
4. Kuder Preference Record - vocational.
5. A questionnaire on motives for entering upon teaching as a career.

These produced twenty seven measures which were then correlated with each other and the criterion Teaching Mark.

In none of the colleges did Sister Tarpey find a significant relationship between the intelligence score and the teaching mark and in only one college was such a relationship found, between personality factors and the teaching mark. In this institution Cattell's Factor G. was found to produce the highest coefficient with $r = +0.446$ while

Cattell's 16 P.F.:	A = -0.442	
,, ,,	H = -0.408	
,, ,,	M = -0.372	(28 students)

The Minnesota Teacher Attitude Inventory was found to produce positive correlations with teaching in all four colleges, in two cases at a significant level.

N = 31 $r = + 0.434$

N = 39 $r = + 0.330$

In concluding her account she agrees that while it is possible that the tests themselves are not good predictors, since they appear to be normal and expected, then the basic criterion of the teaching work is itself an unreliable statistical measure.

CHAPTER IX

THE PRESENT INVESTIGATION

The review of some of the many investigations into various aspects of teaching and the selection and education of students for work in this field reveals a wide diversity in terms of theory, approach and choice of instruments. Even when the area of interest has been common to a number of researchers there still tends to be general disagreement regarding the best experimental design, or the most suitable instruments to assess the truth of certain hypotheses.

With regard to the area of particular interest for the present investigator, which circumstance had decreed should be an analysis of the psychological and other factors which might have a bearing upon the theoretical and practical performances of students in training, it was found that whilst a number of earlier researches had approached the problem from particular selected standpoints using a handful of variables, most recent work, frequently using teams of researchers had mounted more broadly based attacks. Technologically the latter approach has become more feasible through the wider availability of computers which have enabled larger masses of data to be processed than would have been possible for one person to handle in a reasonable period of time. Far more important is that this had enabled individual researchers to investigate variables which although they might have normally considered them worthy of attention, would not have been included for reasons of time or space. They might well have had to rely on the assumption that they were of marginal interest and were randomized with regard to the particular selected variables. A statement on this approach is given by W. D. Wall (1959) and a synopsis and criticism of his views by Bantock (1965), P.155 et seq..

The Subjects and the Research.

In the present study all the students entering upon a three year course at Cardiff College of Education, or Cardiff Training College as

it then was in the September of 1963, were included in the investigation. This is perhaps the main point which makes this enquiry different from most other researches on the subject. Generally volunteers are called for and this was carefully considered as a possibility but on balance it was decided that the risks involved in including the whole year group in this way would be less than those involved in calling for volunteers. It was felt that calling for volunteers would run the grave risk of enabling those who felt that they had some peculiarity or deficiency of personality, or those who thought their work poor, to opt out of the investigation: these would be some of the various people who might most repay scrutiny in such a study as the present one.

Considerable pains were taken to win the co-operation of the student body. The status of the researcher was established by the head of the Education department and by the help and courtesy of his colleagues in the department of Education. At the first meeting of the students with the department the students were informed that they had been selected as a sample for scrutiny and, in general terms, an outline of the project was presented along the following lines:

"We are interested in knowing what kinds of people make good teachers. If we knew this we could select more potentially good teachers at interviews. But before we can ask the right questions we must know what to look for. What we intend to do is to study your progress carefully and relate it to your results in college examinations and teaching practices. Sometimes you will be asked to answer questionnaires and other devices.

Before going any further I would like to make clear the fact that, although your inclusion in the experimental survey will give you first hand experience of many of the devices that you will hear about in lectures in psychology, the results and answers given will be absolutely confidential. I alone will see them and I give you my word that no information given to me in this way will be passed on to anyone else and this includes the head of department and the Principal.

Secondly : None of this information will be used by me

in any way that will prejudice or interfere with your professional career."

Far more than this was said, for example, that other student groups throughout the country were being studied by other researchers etc.. Above all there was continual reassurance that anonymity would be respected, that there would be no victimisation and generally that confidences would be respected. Finally those who wished on any grounds to be excluded from the investigation were asked to see me personally whether then or immediately they came to this decision. When no immediate move was made the proposal was given to the meeting and the students evinced a general willingness to co-operate.

The above description has given in some detail the approach made to the student group for it was found to work. No student at any time after the meeting protested through the student officers, to the head of department or Principal or to research worker personally. At the meeting objections and questions were discussed and the answers given appear to have satisfactorily dealt with matters from the students' point of view.

Throughout the investigation demands upon the students' personal time were kept to an absolute minimum and most of the instruments administered were personally handled by the investigator during class time. On more than one occasion, however, he was most grateful for the assistance of his colleagues for administering tests simultaneously in a number of lecture rooms. Virtually all the material collected was marked by the investigator himself and none of the information obtained was divulged except, where the interested student requested it, to himself. During the final term nearly every student in the residual sample (255 completed the course after withdrawals and wastage) which included all the students following the three year course 1963-66, asked for a private interview to receive the results of their tests.

It may be convenient to note here that a large proportion of the 235 who received their results in this way accepted them as a fair statement, whether they were good, bad or indifferent. Only two disputed them. One, who superficially appeared calm and mature in his dealings with others, became very indignant and excited when the fifth heading on Autia (Cattell's Factor M.) was mentioned, along with the others to explain his high score on this factor. The particular word which caused the agitation was 'Hysterical' in the trait description "Generally cheerful, but occasional hysterical swings of 'Giving Up'!"

The other student was one with a family history of instability and a generally low appreciation of his own strengths and weaknesses : subsequently he failed most of his final examinations. (Case study II p.376).

The greatest difficulty experienced in the administration of test material was how to reach students who were ill or otherwise away when any step in the investigation was taken. The only solution found was to post a notice asking for attendance at another suitably convenient time. Whenever a personality or intelligence test was involved this was the only device resorted to, although it sometimes took five or six notices and a month's work to cover every elusive member of the group : it was necessary to apply pressure by circular letters pointing out what wastage involved in terms of extrapolation and substitution but leaving the onus on the student. This worked very well. Where general questionnaires were involved and students were away copies were sent with a circular letter asking for co-operation. These had approximately a 90% return and all were obtained by a third attempt.

In only some eight cases on single occasions was the substitution of an extropolated result necessary although several thousands of items were derived from the 255 subjects under the 91 major headings. In

In these cases this was because a clerical error had not revealed the omission until some time after the testing session and it was felt that to test then would be undesirable.

It is a tribute to these students that they co-operated so magnificently and answered so patiently so many thousands of questions, some of which, at first at least, must have seemed strange if not pointless to them. A most interesting, not to say, pleasing phenomenon was the development of the group's interest in research, psychology and education generally. Certainly very many students towards the end of their course went out of their way to express an interest in the work and their pleasure at having been included in the project and it was particularly gratifying that one of the students who did this was a female who had raised most objections at the initial meeting. (This same student also fomented a rebellion against an intelligence test when the tutor in charge, sceptical of mental testing herself, had told the group they must do it.

When the purpose of including such a test was later made clear and they were invited to do it they co-operated. The resulting scores, by inspection only, appeared no different from those obtained from other groups.)

A general point which often arises in research concerns the extent to which the findings are generally applicable. The central problem in enquiries such as the present one is that the Hawthorne effect must be at least expected. Since the writer argues elsewhere (p.109), that subjective estimates have a place in personality research and certainly they have been included extensively in terms of students' and tutors' assessments in other enquiries, as well as in the present one, his views may be given as a considered opinion on this point.

The students were fully aware that they were under scrutiny by the researcher and that the 'test' data would be related to college

academic and practical grades. Therefore, there is the initial probability that their performance may be exceptional. It is also true to say that as the second year progressed colleagues in the staff room were frequently heard to comment that this was a good year. Whether the two 'facts' are inter-related it is impossible to say, but it would seem even more unreasonable to suppose that there is no possibility of a causal connection. In the final interviews several students spontaneously spoke of having been motivated to work harder by the research and when cross-questioned most referred to the level of Aspiration technique used in the enquiry.

In order that the final results of the experimental group may be seen in the context of results from the college in other recent years, raw data has been obtained by courtesy of the Secretary of the University of Wales School of Education. The following computations and analyses are, however, the responsibility of the writer.

City of Cardiff College of Education

Education Results

	<u>No.of Candidates:</u>	<u>Passed:</u>	<u>Credits:</u>	<u>Distinctions:</u>
1963	109	95	5	5
1964	129	124	4	0
1965	202	193	6	3
*1966	283	245	23	7

These results may be related to those computed for all the other eight colleges, excluding Cardiff, in the University of Wales School of Education.

	<u>No.of Candidates:</u>	<u>Passed:</u>	<u>Credits:</u>	<u>Distinctions:</u>
1963	916	814	47	40
1964	959	854	65	31
1965	898	801	48	28
*1966	1300	1068	139	43

Unfortunately, the results are not available for students from the colleges who had completed only a full three year course : the figures include students who had taken one or two year shortened courses. However it is possible to note general trends from these figures over the previous three years for Cardiff and the other training colleges, and then to examine the extent to which the sample contributed to the total Cardiff figures.

Converting the above tables to percentages of the Candidates sitting the examinations we have:-

City of Cardiff : % of Candidates who obtained

	<u>Pass</u>	<u>Credit</u>	<u>Distinction</u>
1963	87.2	4.58	4.58
1964	96.1	3.10	0
1965	95.5	2.97	1.48
<hr/>			
* 1966	86.5	8.2	2.5

Similarly converting the scores for all other Welsh colleges, excluding Cardiff:

Other Welsh Colleges : % of Candidates who obtained

	<u>Pass</u>	<u>Credit</u>	<u>Distinction</u>
1963	88.9	5.1	4.4
1964	89.1	3.7	3.2
1965	82.2	5.3	3.1
<hr/>			
* 1966.	82.2	10.9	3.3

An examination of the total Cardiff scores indicates that the 1966 group in terms of the number sitting during the preceding three years

1. obtained less pass grades than any previous year.
2. obtained almost twice as many credits as any preceding year and more than twice as many as the average for the previous three years.
3. The absolute number of distinctions, like the absolute

number of credits, was greater than in any previous year, and in terms of percentages was greater than the average percentage of credits over the three previous years.

A study of the figures for the other colleges reveals certain similar trends in the reduction in the proportion of passes and the increased proportion of credits in 1966. But, the proportion of credits is not double the average for the previous three years. So too, the proportion of credits is slightly less than the average for the preceding three years which is contrary to the pattern of the Cardiff results.

However, before it is reasonable to even hazard a guess about this influence of the research upon the student sample it is necessary to see to what extent the actual total figures for all courses are indebted to the sample results. Of the students who started in 1963 at the City College a number withdrew early in the first year. 85 men continued the course to the final examinations and of 170 women who were present until most of the test data had been collected, 165 remained to sit the final examinations. These 5 gaps were filled by dummy average results to assist processing. In the University college or ministry returns a figure of 166 for the women sitting the examination at the end of the 3 year course may be found : this is because a woman student joined the course during the second year but is not included in the sample analysis or in the following analysis.

City of Cardiff College of Education

Main Sample's Education Results 1966

<u>No. of Candidates</u>	<u>Passed</u>	<u>Credits</u>	<u>Distinctions</u>
250	219	18	7
	87.6%	7.2%	2.8%

This shows that the sample accounted for all the distinctions in the Cardiff results for 1963 and since 3 of the 5 credits were obtained by short course students following a two year course, the

last of which was in the same class groups as the main three year sample, the group is not free from 'contamination'. (Many of these students asked to be permitted to sit tests they had missed but such data is not included).

Accepting the data for the sample group as it stands, it seems reasonable to observe that the main sample's results show passes at the credit level superior to those obtained at the College in any of the three previous years whether on average or taken individually, and the distinction rate shows a superiority over the average result for the preceding three years. Comparison with the other colleges suggest that these results are not exceptional; but close scrutiny of the calculated data indicates that colleges vary in offering distinctions from those who offer consistently around 2% for this grade to those who offer over 60% for distinction in a given subject. Thus it seems fair to confine the comparison to the College's students' results over the preceding years for which data is available and to suggest that part of the superior performance of the group was because of its involvement in the research. (Detailed figures are not given since this is very much a subsidiary element but in a number of other subjects the performance of the sample was exceptional in that distinctions were obtained where none had been previously granted: 64 students obtained at least one credit and 14 obtained at least one distinction).

CHAPTER X

The major hypotheses

The review of the researches carried out prior to embarking upon the investigation had suggested a number of possible areas for investigation. The review, as developed in this thesis indicates to some degree, even as it seeks to reflect the general context of research into personality in relation to performance in educational settings, the line along which the writer has been thinking and the extent to which he has selected his material. Since with the passage of time and the accumulation of data some development of the original thinking will have probably occurred, it may be convenient to include the original statement of the problem as set out at the beginning of the enquiry.

"In a recent review of research into the training of teachers A.E. Allen (1963) said that whilst adjustment or mental health is of particular importance for teachers and student teachers yet we have only collections of opinions about the problems students face and very little knowledge.

It might seem reasonable to suppose that the students who have the most favourable attitudes to teaching would be the most successful when attainments and levels of intelligence are taken into consideration: yet Evans (1952-3) in this country and Cook, Leeds and Callis (1954) in America report little connection between attitude and success as estimated by the final examinations. This would seem to indicate that there is room for further investigation taking into account other personality factors which may well play a dominant role in the crucial transition period when the pupil becomes a teacher, the adolescent a mature person. The fact that stresses are produced at this time is substantiated by the work of Collier (1959) and Tibble (1959) here and McGrath (1950) in the United States, and it is open to investigation to discover to what extent these act as a drive to effective action or tend to inhibit it.

Vernon (1953) has said that "ideally students' self-analysis of their reactions to trial teaching situations would be useful when combined with other information for assessing acceptability for training". It should be of value to see to what extent such self analysis is related to personality traits assessed by an established personality inventory, for Broadbent (1958) and Furneaux (1957) and in Australia, Savage (1963) found that the most successful University students had the lowest extraversion scores whily Lynn (1959) and Savage produced the more controversial results that link academic success with high incidence of neuroticism.

It is proposed that a year group of students should be followed throughout their three year course and that a battery of established and experimental cognitive and conative tests should be administered: additional information in terms of socio-economic status, past academic success and entry grade would be taken into consideration. The whole body of information would then be considered in relation to its various component elements and against the final theory and practical grades".

The original statement of hypotheses proposed for examination was given as follows:-

I

1. That personality factors play a vital role in the performance of students in their final theoretical and practical examinations.
2. That emotional maturity is an important factor in the more successful performances of students.
3. That individuals displaying marked introvert traits perform best in theoretical examinations.
4. That those with strong extravert tendencies succeed best in practical teaching situations.
5. That a moderate degree of neuroticism serves as a spur to effort and thus provides good performances in Theory and Practice.

6. That a high neurotic score interferes with effective action and this produces a greater effect in practical than in theoretical examinations.

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II

1. That students' own estimates of their final performance is significantly correct.
2. That students with high introvert and low neurotic scores make the most accurate predictions of their own performance.

- - - - -

III

1. That past academic performance is significantly related to theory grades but not to practical teaching grades.
2. That interview entry grades are successful predictors of performance but have a lower level of significance than other assessments.
3. That past academic performance is an inferior method of prediction to that based on personality assessments.

- - - - -

IV

That new experimental questionnaires, self rating scales and a projective test will be of value in identifying those aspects of personality which make for success in the theory and especially the practice of teaching in college. "

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The construction of the experimental design was implicit in the form of the investigation and consisted of a comparison of the whole group's performance from one to another of a variety of situations. To this extent the enquiry was envisaged as descriptive and the generally accepted practice of using the technique of forming a matrix of correlations of coefficient was adopted. Tests of significance were applied at the five per cent. and the one per cent. levels and only results reaching beyond the former lower level of significance are

discussed in the analysis.

A further more analytic process of handling the data was adopted in relation to the scores on a number of selected variables. A number of sortings was carried out for all the other ninety variables on the basis of the criterion variable, after the raw scores on it had been arranged in order of magnitude. Arithmetic means were calculated for the other variables sorted on the basis of their presence in the top or bottom 10% on the criterion variable and 't -tests' were applied to measure whether any observed differences were significant. The advantage of this technique of analysis was that it enabled attention to be focussed at the extreme ends of the continuum under consideration and largely avoided the blanketing effect created by the influence of those scoring centrally or having an average performance on most assessments.

Finally, although the main purpose of the enquiry was to consider the performance of the whole body of students, a break down of scores into those obtained by men and women students was carried out and t-tests of significance applied to the observed differences between the means of the groups. (In the case of the men a further analysis was carried out into the differences in scores obtained by those who were following the specialist course in Physical Education and those following general subjects.)

* The personality and performance profiles of a small number of students who performed exceptionally well or poorly are considered as individual case studies in Chapter XIII (P.370).

The Selection of TestsCattell's 16 P.F.Q.

In recent years research workers have tended increasingly to use Cattell's personality tests in carrying out investigations in the field of educational research. This trend has continued even while this enquiry has been in progress.

For the present enquiry his "16 Personality Factor inventory" seemed admirably suited. From 1937 Cattell has worked consistently on the problem of personality producing an average of ten articles a year in the last decade or so. Starting from the 17,953 trait names traced by Allport, he reduced the number to 160 through the application of factor analysis and added a further eleven which he considered important.

Repeated experimentation led Cattell to conclude that traits may be classified into two kinds, surface and source traits. The former, as the name suggests, indicate the external facts of behaviour and as such are liable to imprecision and fluctuation as well as being more superficial than the latter, which are the underlying dynamic influences which persist longer in time and occasion the fluctuations in the surface traits. These source traits consist of those which have been genetically acquired and also those which have been developed or 'learnt' through the intuition of the individual and his environment. The full description of the construction of the 16 P.F. and the selection of the items to be included in it is given by Cattell (1957) in part II of this monumental work, as well as in the Handbook to the test itself; Cattell (1957 + 1962)

Cattell makes the specific claim for 16 P.F. that,

"At this point it suffices to summarize that these are the main dimensions (a) that have been found necessary and adequate to cover all kinds of individual differences of personality found in common speech and psychological literature (They leave out no important aspect of the total personality.); (b) they are

independent of one another, so that is possible for a person to combine any score whatever on one with any score on others (in other words, they do not overlap in meaning, or waste scores by partially repeating the same measure under a new name, as many arbitrary questionnaire scales do, but represent clear functional unities.); (c) that are known to be important in the sense of each having a wide area of influence on behaviour, and in which the influence can be understood in terms of psychological processes of maturation, learning, and interaction with physiological conditions". (Sic. P.2-3; The cross reference to the previously cited work Personality and Motivation, structure and measurement).

R.B. Cattell's 16 P.F. Questionnaire

Bipolar Descriptions of Source Traits (Factors) A

Through Q4

<u>High Score</u>		<u>Low Score</u>
	<u>Factor A</u>	
CYCLOTHYMIA, A+ (WARM, SOCIABLE)	versus	SCHIZOTHYMIA, A- (ALOOF, STIFF)

This factor has been found to load most highly the following traits:

Good Natured, Easy Going	vs.	Aggressive, Grasping, Critical
Ready to Co-operate	vs.	Obstructive
Attentive to People	vs.	Cool, Aloof
Soft Hearted, Kindly	vs.	Hard, Precise
Trustful	vs.	Suspicious
Adaptable	vs.	Rigid
Warm Hearted	vs.	Cold

Factor B

GENERAL INTELLIGENCE, B+ (BRIGHT)		MENTAL DEFECT, B- (DULL)
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The measurement of intelligence has been shown to carry with it as a factor in the personality realm some of the following ratings:-

Conscientious	vs.	Of Lower Morale
Persevering	vs.	Quitting
Intellectual, Cultured	vs.	Boorish

Factor C

EMOTIONAL STABILITY OR EGO STRENGTH, C+ (MATURE, CALM)	versus	DISSATISFIED EMOTIONALITY, C- (EMOTIONAL, IMMATURE, UNSTABLE)
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This factor loads:

Emotionally Mature	vss	Lacking in Frustration Tolerance
Emotionally Stable	vs.	Changeable (in attitudes)
Calm, Phlegmatic	vs.	Showing General Emotionality
Realistic about life	vs.	Evasive (on awkward issues and in facing personal decisions)

Absence of Neurotic Fatigue - vs. Neurotically Fatigued.
Placid vs. Worrying

Factor E

DOMINANCE OR ASCENDANCE, E+ (AGGRESSIVE, COMPETITIVE)	versus	SUBMISSION, E- ("MILK-TOAST", MILD)
Assertive, Self Assured	vs.	Submissive
Independent Minded	vs.	Dependent
Hard, Stern	vs.	Kindly, Soft Hearted
Solemn	vs.	Expressive
Unconventional	vs.	Conventional
Tough	vs.	Easily Upset
Attention Getting	vs.	Self-Sufficient

Factor F

SURGENCY, F+ (ENTHUSIASTIC, HAPPY-GO-LUCKY)	versus	DESURGENCY, F- (GLUM, SOBER, SERIOUS)
Talkative	vs.	Silent, Introspective
Cheerful	vs.	Depressed
Serene, Happy-go-lucky	vs.	Concerned, Brooding
Frank, Expressive	vs.	Incommunicative, Smug
Quick and Alert	vs.	Languid, Slow

Factor G

CHARACTER OR SUPER-EGO STRENGTH, G+ (CONSCIENTIOUS, PERSISTENT)	versus	LACK OF RIGID INTERNAL STANDARDS, G- (CASUAL, UNDEPENDABLE)
Persevering, Determined	vs.	Quitting, Fickle
Responsible	vs.	Frivolous
Emotionally Mature	vs.	Demanding, Impatient
Consistently Ordered	vs.	Relaxed, Indolent
Conscientious	vs.	Undependable
Attentive to People	vs.	Obstructive

Factor H

PARMIA, H+ (ADVENTUROUS, ("THICK-SKINNED"))	versus	THRECTIA, H- (SHY, TIMID)
Adventurous, Likes meeting People	vs.	Shy, Withdrawn
Active, Overt Interest in Opposite sex.	vs.	Retiring in Face of Opposite Sex.
Responsive, Genial	vs.	Aloof, Cold, Self-contained
Friendly	vs.	Apt to be Embittered
Impulsive and Frivolous	vs.	Restrained, Conscientious
Emotional and Artistic Interests	vs.	Restricted Interests
Carefree, Does not see Danger Signals	vs.	Careful, Considerate, Quick to see Dangers.

Factor IPREMSIA, I+ (SENSITIVE versus
EFFEMINATE)

HARRIA, I- (TOUGH, REALISTIC)

Demanding, Impatient, Subjective	vs.	Realistic, Expects Little
Dependent, Seeking Help	vs.	Self-reliant, Taking Responsibility
Kindly, Gentle	vs.	Hard (to point of cynicism)
Artistically Fastidious, Affected	vs.	Few Artistic Responses (but a not lacking taste)
Imaginative in Inner Life and in Conversation	vs.	Unaffected by "Fancies"
Acts on Sensitive Intuition	vs.	Acts on Practical, Logical Evidence
Attention Seeking, Frivolous	vs.	Self-sufficient
Hypochondriacal, Anxious	vs.	Unaware of Physical Disabilities

Factor LProtension (PARANOID
TENDENCY, L+
(SUSPECTING, JEALOUS)

versus

RELAXED SECURITY, L-
(ACCEPTING, ADAPTABLE)

Jealous	vs.	Accepting
Self-sufficient	vs.	Outgoing
Suspicious	vs.	Trustful
Withdrawn, Brooding	vs.	Open, Ready to Take a Chance
Tyrannical	vs.	Understanding and Permissive, Tolerant
Hard	vs.	Soft-hearted
Irritable	vs.	Composed and Cheerful

Factor MAUTIA, M+ (BOHEMIAN INTROVERTED
ABSENT-MINDED)

versus

PRAXERNIA, M- (PRACTICAL, CONCERNED
WITH FACTS)

Unconventional, Self- absorbed	vs.	Conventional, Alert to Practical Needs.
Interested in Art, Theory, Basic Beliefs.	vs.	Interests narrowed to Immediate Issues
Imaginative, Creative	vs.	No Spontaneous Creativity
Frivolous, Immature in Practical Judgement	vs.	Sound, Realistic, Dependable, Practical Judgement
Generally Cheerful, but Occasional Hysterical	vs.	Earnest, Concerned or Worried but very steady
Swings of "Giving-Up"		

Factor NSHREWDNESS, N+ (SOPHISTICATED,
POLISHED)

versus

NAIVETE, N- (SIMPLE, UNPRETENTIOUS)

Polished, Socially Alert	vs.	Socially Clumsy and 'Natural'
Exact, Calculating Mind	vs.	Vague and Sentimental Mind
Aloof, Emotionally	vs.	Warm, Gregarious, Spontaneous
Disciplined		
Esthetically Fastidious	vs.	Simple Tastes
Insightful Regarding Self	vs.	Lacking Self Insight
Insightful Regarding Others	vs.	Unskilled in Analyzing Motives
Ambitious, Possible	vs.	Content with what comes
Insecure		
Expedient, 'Cuts Corners'	vs.	Trusts in Accepted Values

Factor 0

GUILT PRONENESS, 0+ (TIMID, INSECURE)	versus	CONFIDENT ADEQUACY, 0- (CONFIDENT, SELF-SECURE)
Worrying, Anxious	vs.	Self-Confident
Depressed	vs.	Cheerful, Resilient
Sensitive, Tender, Easily Upset	vs.	Tough, Placid
Strong Sense of Duty	vs.	Expedient
Exacting, Fussy	vs.	Does not Care
Hypochondriacal	vs.	Rudely Vigorous
Phobic Symptoms	vs.	No Fears
Moody, Lonely, Brooding	vs.	Given to Simple Action

Factor Q.1

RADICALISM, Q1+	versus	CONSERVATISM OF TEMPERAMENT, Q1-
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Factor Q.2

SELF-SUFFICIENCY, Q2+ (SELF-SUFFICIENT, RESOURCEFUL)	versus	GROUP DEPENDENCY, Q2- (SOCIABLY GROUP DEPENDENT)
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Factor Q.3

HIGH SELF-SENTIMENT FORMATION, Q3+ (CONTROLLED, EXACTING WILL POWER)	versus	POOR SELF-SENTIMENT FORMATION, Q3- (UNCONTROLLED, LAX)
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Factor Q.4

HIGH ERGIC TENSION, Q4+ (TENSE, EXCITABLE)	versus	LOW ERGIC TENSION, Q4- (PHLEGMATIC, COMPOSED)
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All these factors except the last few have been found in real life behaviour situations whereas the last four, although they are found by Cattell to predict many criteria and are frequently encountered in the realm of questionnaires, they have been validated only in this realm.

As well as these basic factors the 16 P.F. also enables the two second- order factors for anxiety and introversion-extraversion to be formed. For the former the raw scores on Q4, O, L, 11-C and 11-Q3 are converted by means of the tables supplied to sten scores: these are then weighted by the given amounts and summed thus giving the second order anxiety score for one individual.

The second - order introversion - extraversion factor is somewhat similarly worked using the factors A-, F-, H-, M and Q2. The high

score indicates a greater degree of anxiety in the former case and of introversion in the second.

In the data analysis the 16 P.F. variables occupy the first sixteen places, as in the sequence of description given above, and the second order anxiety and introversion - extroversion factors occupy the seventeenth and eighteenth positions respectively.

Eysenck's personality Inventory

Eysenck like Cattell has published at an enormous rate on the subject of personality assessment. So far he has not attempted to formulate a theory of personality as he feels this to be premature. The main characteristic of Eysenck's approach is that he tends to emphasize types rather than traits although he insists that these emerge from the rigorous application of factorial analysis techniques. Nevertheless, he is prone to quote the Galen - Kant-Wundt classification of the four temperaments, melancholic, choleric, phlegmatic and sanguine and to show how naturally traits fall into these categories.

Eysenck (1947) put forward the view that extraversion - introversion and neuroticism, emotionality or stability - instability, were the two most clearly marked and outstandingly important dimensions of personality and in much of his writing appears influenced by Jung's classification of introversion and extraversion. In this Eysenck avoided the Jungian tendency to see introverts and extraverts as discrete groups but rather as a continuous distribution with the majority in the centre.

In the case of neuroticism, Eysenck avoids the Freudian concept of neuroticism as differing only in degree of severity from psychoticism. Instead he develops (Eysenck (1952)) the Kretschmerian notion of psychoticism as a continuum orthogonal to both the neurotic and introversion - extraversion dimension.

Whilst the present study was in progress a new personality test became available, the Eysenck Personality Inventory (1964). This instrument, developed from the Maudsley Personality Inventory, was

claimed to be superior on a number of counts including the fact that the Extraversion and Neuroticism scores measured by it had no correlation with each other. It also has a higher reliability coefficient and contains a lie scale.

In the manual to the test it is stressed (P.5-10) that extraversion and Neuroticism/stability are the major dimensions and psychoticism is not discussed. When referring to the controversy centring around his advance of this hypothesis in 1947, Eysenck goes on to say.....

"But now the major alternative scheme, namely that of Cattell, has been found to give rise to essentially very similar results (Cattell and Scheier, 1961) and Guilford's personality studies too, have resulted in second-order factors which closely resemble those here postulated. While not wishing to deny the existence and importance of factors additional to E and N, we believe that these factors contribute more to a description of personality than any other set of two factors outside the cognitive field". (P.6 - 7)

It may be convenient to interject a word here about the terminology and concepts of anxiety and neuroticism as used by Cattell and Eysenck.

Cattell (1962) describes Factor C as 'Emotional Stability or Ego Strength versus Dissatisfied Emotionality' and goes on to say,

"The pattern has been shown to exist among normals as well as in groups of neurotics, and in the latter has been called by Eysenck, "general neuroticism". (P. 12)

Further on Cattell enlarges on this:

"It is now reasonably clear that: (a) In objective tests the factor of neuroticism as found by Cattell (15, 17, 28), Eysenck (49) and others is quite distinct from the factor of anxiety (41). (They are labelled, as objective test batteries U 1.2.3. and U1. 24 respectively, in the Universal Index series Factor - numbering (28). Neurotics may differ from normals primarily in one factor (U1. 23 (-), which proves to be C- in the 16 P.F.-, but they also tend to differ, for complex reasons of social and genetic selection, and to a lesser degree, in several other factors,"

Thus from Cattell's statement it appears that he regards factor C as the best measure of what Eysenck would call Neuroticism, and

prefers to reserve the label Anxiety for the second order factor loaded on C, L, O, Q3 and Q4. As we have already seen, Eysenck does not make such a sharp distinction but tends to use neuroticism as equivalent to emotionality and stability - instability. Recently, Eysenck (1965) has devoted a chapter to the topic of 'neurotic' and uses a portion of it to a consideration of the confusion and conflict surrounding the use of the term both in relation to 'psychosis' and 'anxiety'. He poses the question "What, then, about the definition of 'neurosis'? and proceeds to describe certain types of behaviour 'which most people would readily agree to be truly neurotic.' The examples given are of subjects with phobias and of obsessional and compulsive symptoms. Then, "Anxiety is the central feature of all neurotic troubles, often accompanied by depression Reactive depression..... is another quite frequent neurotic symptom, usually, ~~although~~ not always, accompanying anxiety." (P. 98 - 9)

Adcock (1965) has devoted a paper to a comparison of the concepts of Eysenck and Cattell indicating that although Eysenck calls his first factor neuroticism "he would appear to regard its main constituent as being an emotional sensitivity which makes its possessor more vulnerable to the stress of living" and Cattell is inclined to argue that neuroticism relates to half the factors, which appears to indicate a major disagreement, this is more apparent than real. Furthermore, the difference is largely accounted for in terms of the different factor analytic techniques used by the two and the two centroid factors extracted by Eysenck correspond to the two largest second order factors of Cattell: "The latter calls them anxiety and extraversion or exvia. Eysenck elsewhere calls his second factor extraversion while the relation between anxiety and neuroticism seems obvious enough". (P. 91)

Eysenck (1963) supplies the necessary comment in denying that he uses 'anxiety' and 'Neuroticism' interchangeably as assumed by Biggs. He, Eysenck, regards neuroticism as:

"An inherited psycho-physical disposition, closely linked with the lability of the autonomic system, which governs a person's emotional reactivity, and may predispose him to the development of neurotic disorders under suitable circumstances. Anxiety is a conditioned fear reaction which is particularly characteristic of dysthymic neurotics, i.e. of persons who are high on the factor of neuroticism and also on the factor of introversion, which is significantly correlated with conditionability. Anxiety, Therefore, is a 'mixed' concept, being related both to neuroticism and to introversion. (The position is rendered rather confused by Cattell's use of the terms 'Neuroticism' and 'anxiety' which is exactly the opposite of mine.)" (P. 192)

The Minnesota Teacher Attitude Inventory

In the review of researches, mention is often made of attempts to assess the views and feelings of teachers by the means of attitude or opinion questionnaires. It was decided, therefore, to include a fairly recent measure of attitude towards teaching in the present enquiry.

Investigation revealed that the Minnesota Teacher Attitude Inventory developed by Cook, Leeds and Callis (1951) might be worthy of attention because of the variation in the reports of research workers using it. It is not intended to repeat the details of the Inventory or the steps involved in its construction except in fairly general terms, for the Manual (1951) gives the necessary information and ^{lists} original sources publishing steps in the development of the inventory. At the same time it may be convenient for future research workers to have reference to the following summary description of this one hundred and fifty item inventory.

Certain assumptions have been made about that constitutes a 'good' or 'bad' teacher. The former:

"Should be able to maintain a state of harmonious relations with his pupils characterized by mutual affection and sympathetic understanding. The pupils should like the teacher and enjoy school work. The teacher should like the children and enjoy teaching. Situations requiring disciplinary action should rarely occur. The teacher and pupils should work together in a social atmosphere of co-operative endeavour, of intense interest in the work of the day, and with a feeling of security growing from a permissive atmosphere of freedom to think, act and speak one's mind with mutual respect for the feelings, rights and abilities of others. Inadequacies and shortcomings in both teacher and pupils should be admitted frankly as something to be overcome, not ridiculed. Abilities and strengths should be recognised and used to the utmost for the benefit of the group. A sense of proportion involving humor, justice and honesty is essential. Group solidarity resulting from common goals, common understandings, common efforts, common difficulties, and common achievements should characterize class".

The scale is so constructed that a score is first obtained on this desirability/^{dimension}on/_{the} number of 'right' responses ("There are no 'right' or 'wrong' answers with the M.T.A.I. There are, rather, agreement or disagreement with specific attitude statements. In order to avoid a change in accepted terminology, however, the scoring keys have been given the commonly used 'rights' and 'wrongs', labels"), and a second score obtained on the 'wrong' responses. The hypotheses regarding the undesirable qualities of teacher are indicated by the following:-

"At the extreme of the scale is the teacher who attempts to dominate the classroom. He may be successful and rule with an iron hand, creating an atmosphere of tension, fear and submission; or he may be unsuccessful and become nervous, fearful and distraught in a classroom characterized by frustration, restlessness, inattention, lack of respect, and numerous disciplinary problems. In either case both teacher and pupils dislike school work; there is a feeling of mutual distrust and hostility. Both teacher and pupils attempt to hide their inadequacies from each other. Ridicule, sarcasm and sharp-tempered remarks are common. The teacher tends to think in terms of his status, the correctness of the position he takes on classroom matters, and the subject matter to be covered rather than in terms of what the pupil needs, feels,

knows, and can do."

The possible score ranges from + 150 to - 150 and is determined by subtracting the 'wrong' score from the 'right'.

The validity of the questionnaire was established by its administration to a random sample of 100 teachers in S. Carolina and correlating their scores with three ratings of the teacher - pupil report:

- (A) A fifty question 3 point Attitude Scale administered to Pupils taught by the teachers.
- (B) A similar Attitude Scale covering six major traits administered to Principals of the schools in which the teachers taught
- (C) A comparison with ratings made by an expert using an existing rating scale of 'Teacher Effectiveness', (Baxter's (1938)).

Correlation of the Inventory scores with these criteria produced r 's of 0.461, 0.566 and 0.305 respectively, all of which are significant at the 5% level or above.

Repetition on the lines of the broad pattern indicated above, this time in Missouri, produced coefficients of 0.49 for pupils, 0.19 for Principals and 0.40 for experts' ratings with the Inventory. Further investigation by Stein and Harding at the University of Manitoba failed to discover significant correlations with intelligence scores and found that although students could fake an extreme position on one end of the scale they were less successful in attempting to produce a 'good' score on it.

In this country, Evans (1958), administered the Inventory, together with a verbal and non-verbal intelligence test and her Attitude test towards teaching as a career, to 109 post-graduate diploma students. All except the attitude test correlated at the 5% level with the Education Theory marks but none correlated produced a significant correlation with the teaching marks. The inventory was also significantly correlated with the non-verbal Progressive Matrices results, but not with the Moray House ones.

A subsidiary enquiry with 14 students asked to fake their opinions increased their score from 9.43 to 39.79 which casts doubt on the non-falibility claims of the constructors. Herbert and Turnbull (1963) found that the M.T.A.I. did agree with final practical as well as theory results in education; although the scores/did change during the course, suggesting a development of attitude. At the same times the performances of the Bristol students were found to differ considerably from those of their transatlantic counterparts, in the U.S.A. and Canada. A detailed analysis and criticism of the test has recently been carried out by Evans (1966).

Cattell (1965) distinguished between the Galton - Spearman and the Wundt - Pavlov traditions in personality study and argues that the former is characterized by its multivariate approach while the latter concentrates on a single variable or process at a time. In planning the present enquiry some thought was given as to whether or not a measure of intelligence should be included. Personality is often defined in such a way that the intellectual aspect is ignored and the term is reserved from the conative affective side of a person. On the other hand, to rule out intelligence from the study of a person is to look at a very incomplete being: as Garrett (1954) said about limitation in the use of partial and multiple Correlations, "It would be fallacious to interpret the partial correlation between reading comprehension and arithmetic, say, with the influence of "general intelligence" partialled out, as giving the net relationship between the two variables for a constant degree of intelligence. Both reading and arithmetic enter with heavy, but unknown, weight into most intelligence tests....."

Furthermore most other researchers have included tests of intelligence when considering student performance, so whather

intellectual ability is regarded as part of personality or not, it was determined to include a measure of intelligence. Since previous work with children (Jenkins 1962) had indicated that a college in a mixed language area, drawing students from England and Wales, should include non-verbal as well as verbal intelligence test material it was decided to incorporate both types into the enquiry.

It was deemed advantageous to select tests which had been developed from the same theoretical viewpoint and so Cattell's Revised, Second Edition of Scale III Form A (1964) was selected to measure verbal ability and Cattell's Test of g: Culture Fair, Scale 3, Form A (1963) was used to measure non-verbal ability. The former has been used since 1930 was revised in 1952 and the edition used in the survey was issued in May, 1964. It has the advantage over a number of other tests in that it is possible to combine the scores on various sub-tests for a variety of purposes: in the current investigation both the total raw score and a score on the vocabulary item were examined since it does include perceptual items and some suggestions have been made e.g. Learned and Wood (1938) that language attainment is a factor worthy of consideration in regard to student performance.

The Culture Fair measure of g, Scale 3 is more recent, having been published for the first time in 1959. This is a short test occupying a time of only $12\frac{1}{2}$ minutes with four sub-tests giving a total of fifty items. Reliability coefficients or 'Dependability coefficients' range from .84 in the short term to .53 over an extended period. (Cattell (1959) P. 16). The Validity is given by reference to a variety of research comparisons with established intelligence tests where correlations ranging from .56 to .73 have been obtained, using the Revised Stanford Binet and the Otis, while factorial analysis have yielded correlations with the general/ability factor of .53 to .89 for American studies of the sub-tests with results in the upper portion of this range for work in France. (Ibid P.7) This C.F. test has also been found to predict

school achievement at a higher level than the Binet, when the criterion measure was the Stanford Achievement Test: the former yielded a correlation of .36 to the .25 of the latter with the criterion measure.

Butcher and Gorsuch⁽¹⁹⁶⁰⁾ working with a total sample of 600 children of 13 and 17 at Illinois related through measures of school achievement to those for measuring ability and personality. The combination of intellectual with personality measures showed the possibility for a high degree of prediction to be made about school performance.

Cattell (1960) in commenting on this says that:-

"Comparing this with what is usually obtained from using ability tests alone, one notes that between a 5% and 100% improvement on accuracy results from including personality measures".

He also draws on a number of other researches in commenting that this combined approach is superior to a single attack on performance prediction and when this combined approach is used....." These reach a multiple R of 0.7 instead of 0.5....." Cattell (1961)

On these grounds, therefore, it was decided to include the two Cattell measures of Intelligence with his measure of 16 P.F.

Reference has already been made to the stresses produced during training as reported by McGrath (1950), Collier (1957) and Tibble (1959) and it was decided to include a self rating scale on a general College Reaction Questionnaire and to repeat the administration a number of times throughout the course at critical points, such as prior to going out on teaching practice to schools and subsequent to returning from such an experience.

The College Reaction questionnaire was designed to elicit a variety of different kinds of information some of which was needed by the department at the time and some of which has not yet been broken down as it is peripheral to the testing of the main hypotheses considered by this study. The justification for including such a variety of

questions on this document is that it tended to conceal the rating scale to a certain extent. Although, for obvious reasons, these items do stand out. (Appendix H. and K)

Other sample groups of students were asked to write about their experiences in college during training. An examination of these replies indicated that, although generally students appeared to enjoy their college experiences when these were taken as a whole, there were times when they experienced problems. Individual students varied in the particular details of the situations which they cited but there was a high degree of overlap and problems or difficulties which were mentioned by over 5% of the sample were marked for further consideration. Subjects which one might have thought would have featured quite prominently, such as financial difficulties or matters relating to accommodation and domestic arrangements were virtually never mentioned. Naturally this is not the same thing, as saying that these and other problems do not exist for students, but rather that these were not matters which they raised for consideration in an 'Education' context and ^{this is} probably more a response to a functional set produced by the situation than anything else.

When the various difficulties raised were re-examined it became evident they they could be grouped under a series of broad general statements and that the variations in the responses could then be represented in terms of the magnitude or degree of incidence of the problem. The problems thus classified were as follows:-

- (a) Difficulties with a Main Subject.
- (b) Difficulties with a Subsidiary Subject.
- (c) Difficulties of relations with members of College staff.
- (d) Difficulties of relations with other students.
- (e) Difficulties in preparation of lessons.
- (f) Problems of Teaching Technique.
- (g) Problems of Class Discipline.
- (h) Difficulties of relations with members of school staffs.

A 'try-out' with another group of students with a simple 3 point scale was found to be unsatisfactory in that there was too much bunching at the centre position and in some cases a position intermediate between the central point and one extreme was created by the students writing on the sheet a new position. It was also noted that when faced with what was obviously a problem check - list, many students tended to become wary and deny that these applied to them. On the other hand a small number felt that the categories supplied were insufficient to satisfy their particular requirements.

With these points in mind a scale was produced which gave as a proposition the view that "all students teachers face some problems" and went on to invite additions to those listed (two places were left for these and subsequent analysis revealed that only a handful used one of these on any given administration and one or two used both positions on some occasions). In the initial full scale testing of the main sample a four point scale was used thus:- Very Many / Many / Some / Few / Very Few and was scored accordingly from 5 to 1 inclusive. Some students were^{found} however, to use the margin to indicate 'None' and where this was done the position was scored 0. In all subsequent administrations this column was added and scored as indicated.

It was decided that it would be most interesting to ask the students to make assessments of their fellows' difficulties and then to consider their assessment of their own level of difficulty to that which they ascribed to their fellows. It was also thought interesting to consider to what extent these estimates of others' difficulties agreed with the estimates of the whole group of its difficulties.

In order to save time and space and for general convenience in handling the document the same scale was used for the self and group rating, the difference being indicated by a 0 and a X respectively with the group rating being required first.

In the early administrations students were asked to predict their grade on their final examinations on a five point scale for their theory and practical work. It was found that there was a distribution of scores i.e. that some at least were prepared to assert that they believed their performances would be superior or inferior to that of their fellows. This type of item was included in order to throw further light on students' estimates of their own performance, the desirability of which Vernon (1953) had indicated, as well as to provide information which might be related to the Eysenckian assertions on 'Levels of Aspiration' and 'Judgement of Performance' and their connection with selected personality measures as well as with professional training performances.

As long ago as 1933, an attempt was made by Pressey and Pressey (1933), better known as the authors of the "X - O" tests^{*} (Pressey 1919), to measure among other things emotional maturity. Most recently R. Pitts, Lecturer in Education, University College of S. Wales and Mon., developed an Emotional Maturity Scale which the writer in a very small way helped standardize as an undergraduate student of Education. An initial collection of information was made from children between 7 and 20 years regarding their interests, hobbies, tastes, activities etc. etc., A sample of 1700 children in the same range were then asked to respond to a large collection of items classified in 34 groups. The positive responses were then classified into those appearing over and under 12 years of age. Of over 6000 responses, 1000 could be so classified and there were selected for further analysis. They were next administered to groups of children aged 16+ numbering 700 in all and a similar number aged -7 with a small intermediate group of 12 year olds. Analysis, in terms of discriminatory indexes reduced the number to approximately 500 items with a further reduction from administrations to groups of 300 in grammar schools. In the final form used in the present investigation there were 378 items grouped in the following 14 sections:-

* Pressey S.I. and L.C. (1919) "Cross-out Tests - with suggestions as to a group scale of Emotions." J. App. Psychol. 3. 138-150.

Interests

Qualities admired in people.

Worries

Ambitions

Reasons for Anger

Fears

Wishes

Dislikes

Leisure activities

'Wrongs'

Purchases

Pleasures

Daydreams

Reading habits.

This document has not been published but has been circulated privately to a number of research workers. One of these, Wragg (1960) used it in her research into emotional and social maturity in pupils of grammar, comprehensive and modern schools. Scores ranged from .05 to .59, with boys scoring fractionally lower than girls and Modern school pupils below those from Grammar schools, but all ^{average School} scores were in the .33 to .36 range*. Two and a half years later the average scores for all groups had risen and coefficient of correlation with Intelligence and Extraversion were also obtained. Details are given in the discussion on the results of the present use of the Scale (P.220 below).

The use of the Emotional Maturity Scale seems justified on the grounds that concern for the personal development of students is implicit as one of the main grounds in extending the period of teacher training to three years. It is not intended to argue this point extensively but reference to one or two sources where the view is stated explicitly may be sufficient to substantiate the assertion.

In the McNair (1944) report it is argued that one of the reasons, amongst several discussed, for extending the course of training was that it would enable students to reach a "maturity equal to the responsibility of educating children and young children". (P. 65)

* Grammar School .36; Comprehensive .34; Secondary Modern .33.

Wall (1955) argued that "modern conditions demand greater maturity, stability and insight from the teacher than in the past, and if he is called upon to play a constructive.....part in the development of society, then it seems to follow that one of the first essentials in the training course is that of ensuring the teacher's own psychological growth."

Wall goes on to argue that this maturity is exemplified by a maximum degree of objectivity and detachment which is to be developed by enabling the individuals concerned to understand 'the unconscious elements which determine their opinions, attitudes and actions,' (P. 264. Halmos (1958) quotes from the same U.N.E.S.C.O. report and urges that personality study be concerned and taught in a way which will enable students scope for self-development.

The same point has been developed by Morris (1958) in the context of developing sound mental health:

"The very first objective of the training course should be to assist students to achieve a satisfactory degree of personal maturity". (P. 98)

A cursory reading of the extracts quoted might appear legitimately to lead to the conclusion that the maturity referred to is an inevitable concomitant of age, but this is not so. The maturity referred to is a quality of mind and feeling which although generally found in older, rather than younger people, is not a quality which is invariably found in the former group, nor one which never features in the latter. In this connection, Tibble (1963) speaks of the work of University Departments of Education, which normally work with students over the age of twenty-one and indicates that a one year course at the post-graduate level is sufficient only to introduce the prospective teacher to what is involved in acquiring the necessary understanding for effective action in his professional and personal life.

"These changes need time for the maturation of the attitudes and skills involved...." (P. 79)

Thus it was felt that it would be interesting to seek to obtain some evidence of how this quality of maturity, as measured on the basis of the Pitts' Scale would be related to measures of student performance in college work, as well as to the selected measures of personality.

Experience, as well as discussions with students and others engaged in education, both seem to indicate that the best teaching experienced by an individual has generally been at the hands of a teacher who has been endowed with personal qualities or has developed such attributes that he makes an impact upon others. This is not to deny that the intellectual element is important but rather to underline the other qualities which may appear to make the person socially conspicuous: the original word select^{ed} was 'desirable' but it is obvious that there are some members of the teaching profession, as in all kinds of other walks of life, who are widely known, but this may be infamy or notoreity.

However, whether the qualities involved in teaching or academic success as measured by selected criteria are related to the quality of being known by many others, or of knowing them, seemed worth investigating. An arbitrary decision was taken to limit the investigation of breadth of acquaintance to the social contact between the individual student and his peers in the same year group i.e. the rest of the sample. Since for obvious reasons, from what has been said about the pledges of anonymity, no copy ~~of this document~~ of this instrument is included for examination, the following description is given.

The students were told that the document would help to give a picture of the social groups within the year group and they were asked to indicate by a cross (X) opposite the surname, those students whom they would claim to 'know well'; and to put two such crosses against those they claimed to 'know very well'. No attempt was made to explain what was meant by these terms although a great deal of thought was given to this question of definition. When this approach was tried out with a small sample drawn from another group the question was raised but was returned with the

answer - 'you decide'. On investigation it was found that mere acquaintances, in the sense that all belonged to the same year group, were not indicated, but that where the individuals worked lived or played together in a small unit, a single cross was given and where there was a degree of friendship, two were used. There were some exceptions but it was felt that this was a reflection of individual personality differences which was one of the main objects of the exercise. Accordingly, this rubric was retained for the main sample.

The document was entitled as follows:

" Confidential: Social Structure Questionnaire

College No.	Surname	Initials	Sex.
-------------	---------	----------	------

This is an attempt to see to what extent students have developed social cohesion by the second year. "

The rubric then read as indicated above, and the college numbers, surnames and christian names of the students were arranged in six columns across the front and back of a single foolscap sheet.

A detailed treatment of the statistical analysis is given in the appropriate section below (P.323) but one or two observations may be permitted here because of their interest. Not one student appeared to realize that another basic measure could be obtained by, as it were, reversing the sock and seeing how many of his colleagues had indicated his name, or, if any had, either did not mind, or did not believe that the clerical labour would be undertaken for each of the 257 then following the course.

The other point of particular interest, not to say amusement, was that many had singled out an individual of the opposite sex with whom they were known by the writer to be 'going steady', 'unofficially engaged' or formally engaged and added more than the required number of crosses! From this it seems reasonable to conclude that there is some degree of compatability between observed behaviour patterns and pencil

and paper responses with this sample on some topics.

Dr. Evans (1952) was so kind as to draw my attention to her use of a similar device, which yielded the information that the number of choices given was correlated with the teaching mark at the 1% level and that, with this same criterion, the number of choices received was correlated at the 5% level affording evidence for the view previously advanced that the capacity for 'being known' is an advantage in that these are generally assessed as the better teachers. (P. 197)

As well as these devices and the various measures they yielded, biographical data was extracted from the college records. The particular information included in the main analysis relates to the estimate of socio-economic status based on paternal occupation and classified on the Registrar General's five groups ranging from Professional to Casual and Unemployed: previous academic success as indicated by the number of examination subjects passed at G.C.E. ordinary level and at advanced level and ^{age} measured in months.

The students' record from their initial contact with the college was also scrutinized and the interview grades extracted. There is a large variety in the subject matter of the courses of the college and students could pursue a variety of combinations of subjects at subsidiary, main or advanced main level. All, however, followed a general course in English and Mathematics for the first two years of the course and it was decided to include data from the end of the first and second year, based on these two subjects, as measures of academic success. This is a limitation in that the record of the subjects' performance in the selected subjects has not been included in the main analyses.

The main criteria measures were based upon the records of the students' performances in the Education examinations at the end of each academic year, while the teaching performance was assessed by reference to the grades given by the college tutors supervising the students on their second and final teaching practice. The initial practice is reported upon but not

graded, hence it was necessary to enlist the co-operation of several colleagues who, independently of each other were so kind as to classify these reports on the eleven point scale ranging from A+ to E (A+, A....D+, D, F with the last * as failure grade.).

Finally it is stressed that the measures were selected to test the hypotheses advanced (P.109above): the extent to which the results support the hypotheses is given below (P.400). This is the essential design of this investigation. The other information produced is given to assist other researchers who may be interested in the interrelations which are strictly subsidiary to the main plan of the present study.

*Note: D usually constitutes a borderline mark which external moderation tends to adjust to a clear pass or fail.

CHAPTER XII

Analysis of Results

A. Methodology

The two main methods of analysis employed in this enquiry are so well established that they require little introduction: the first requires none since it is Pearson's product-moment coefficient of correlation of the obtained raw scores. Its prime advantage is that it utilizes all of the data available while its main disadvantage is that it reflects the irregularities in the distribution; or, in other words, the obtained coefficient is a reflection of the relationship between two variables but is decreasingly trustworthy the further that either distribution deviates from a normal distribution.

For this analysis Dr. Hugh Pring of I.B.M. arranged an introduction to Mr. M. Gurr of the University College of Swansea Computation Laboratory and a total of 91 variables selected manually from the compiled data were intercorrelated. Before the final results were available the data was processed on an I.B.M. 1620 machine and for the 89 elements then available 4005 coefficients of correlation were obtained of which 2184 were positive. Subsequently the data was transferred to the laboratory's newer I.C.T. 1905 machine and the final data processed. All the data cards were punched and checked on the reader by the writer and the print off checked against the original raw score schedules. Spot checks were also made using a Frieden Cathode-ray desk calculator. In all between sixty and seventy trips were made from Cardiff to Swansea in connection with the analysis. Subsequent to Mr. Gurr's departure the final steps were completed under the direction of Mr. Godfrey with the kind assistance of Mr. Clive Jones.

It has long seemed to the writer that unless prior information is available which may make weighting of scores possible, if not actually desirable, then the presence of a large number of 'average' subjects on

two tests will have the tendency to 'blanket' the influence of the small minority of those who are most deviant. For this reason it was decided to adopt a sorting technique which would produce two groups based on the contrasting extreme scores of the top and bottom 10 per cent. on the selected criterion variable. This contrasting criterion group technique was developed from the idea of the Index of Discrimination E 13 commonly used in item analysis procedures during test construction.

In other words, taking for example final teaching scores as the criterion variable, the scores on teaching were arranged in order of magnitude and the top and bottom 10% extracted representing approximately the best 25 and weakest 25 teachers. The scores of these students on each of the other 90 variables were then identified and extracted and the observed differences between the two groups on every measure was examined by means of a t-test using small sampling formula. Thus, in our example, the best and worst teachers were compared in terms of personality factors, intelligence, age etc.. In all, this criterion group sorting and analysis was carried out eleven times for each of the other 90 variables with the 255 subjects in the sample.

Finally each of the variables under consideration was examined in relation to sex by the application of t-tests to the scores calculated for the 85 men and 170 women who completed the course at the end of three years.

B. Format

This research is designed primarily to examine certain specifically stated hypotheses. In presenting the results two alternatives suggest themselves: the more obvious one is to consider the hypotheses one at a time and to determine the extent to which the evidence from the analyses tends to support or conflict with such hypotheses. The second is to consider the variables used either individually or in convenient groups and to relate these to the hypotheses.

Superficially, the former *modus operandi* appears to have the greater attraction because of its greater elegance in terms of clarity and economy of both time and effort. But the hypotheses are not discrete and hence the same instrument must needs be considered several times in relation to a number of hypotheses. Moreover, it would mean that, for example, certain of Cattell's factors would have to be treated apart from the main body of the 16 P.F. questionnaire.

The latter strategy is adopted in this discussion for a number of other reasons. First, an analysis which is largely correlational is facilitated by a strictly systematic plan when the number of coefficients is so large. Secondly, it makes it easier to guard against what Garrett (1949) amongst others, refers to as a cardinal danger, that of assuming that because two variables A and B correlate significantly then that the former stands in a causal relationship to the latter, whereas B might be responsible for A, or the influence of a third factor C, being related to both, could create their apparent interaction. Thirdly, the scheme by which the results are discussed on the basis of a consideration of the measuring instruments is thought to provide information in the most convenient form for other researchers, whose quest may be for data which is of marginal import for the testing

of the hypotheses in the present study.

Finally, because the study is designed to test specific hypotheses, the original alternative has a place, for the concluding section of the thesis is devoted to a summary of the test results in so far as they support, or otherwise, each individual hypothesis considered in turn.

To facilitate reference to the results, the following sections may be found useful:

1. The Predictor Variables

Cattell's 16 P.F.	Pages	140 - 208
Eysenck's P.I.	Pages	209 - 219
Pitts' E.M. Scale	Pages	220 - 224
The M.T.A.I.	Pages	225 - 230
Cattell's V.I and N.V.I	Pages	231 - 241
Age	Pages	242 - 244
Socio-Economic Status	Pages	245 - 247
Language	Pages	248 - 250
G.C.E. results	Pages	251 - 255
The Interview	Pages	256 - 261
Students Self Estimates	Pages	262 - 295
Pupil/technique/ subject interest	Pages	296 - 299
Estimation of difficulties	Pages	300 - 322
Social Structure	Pages	323 - 324

2. The Criterion Variables

English Year I	Pages	335 - 338
English Year II (Final)	Pages	339 - 341
Mathematics Year I	Pages	342 - 344
Mathematics Year II (Final)	Pages	345 - 347
Education Theory Year I	Pages	348 - 352
Education Theory Year II	Pages	353 - 355
Education Theory Year III	Pages	356 - 358

Teaching Year I	Pages	359 - 361
Teaching Year II	Pages	362 - 365
Teaching Year III	Pages	366 - 369.

C. PRESENTATION1. The Predictor Variables (see P.138).Variable 1. Factor A. Cyclothymia v. Schizothymia.

This quality of sociableness was the first measure to be analysed in detail in relation to the general hypothesis that personality factors have a high relationship with the performances of students in training. Inspection of the stencil reveals that this factor depends on the following questions with the maximum weighting on the response indicated:*

Question No. 3.	:	(a)	Agree
,, , 26.	:	(c)	A waiter in a good restaurant.
,, , 27.	:	(c)	To chat about people and their feelings.
,, , 51.	:	(c)	A grammar or high school teacher.
,, , 52.	:	(a)	Feel that buying presents is a bit of a nuisance
,, , 76.	:	(c)	Selling it to people.
,, , 101.	:	(a)	Talking to customers.
,, , 126	:	(a)	A Lawyer.
,, , 151	:	(c)	A Secretary running a social club.
,, , 176	:	(a)	Accept.

It can be seen, therefore, that the possible range of scores extends from 0 to 20: in the present investigation it extended from 5 to 18 with an obtained mean of 11.8 and a standard deviation of 2.72. This is on the positive side of the factor but nearer the middle of the continuum than the norms for students and teachers given by Cattell (1957)^(a)(P.28).

The highest correlation obtained with this factor is with that of second order introversion, variable [†]17 when a coefficient of $r = -.608$ obtained, which is not surprising since its weighted score contributes to the second order factor. The agreement with (39) Eysenck's extraversion is also beyond 1% with an r of 0.242; an r of $-.241$ was also obtained with (V.14) Q.2 Self-Sufficiency which is a logical relationship, significant beyond the 1% level. Although Cattell has argued the independence of the factors in the 16 P.F. three other factors are significantly correlated with Cyclothymia beyond the 1% level: they are :-

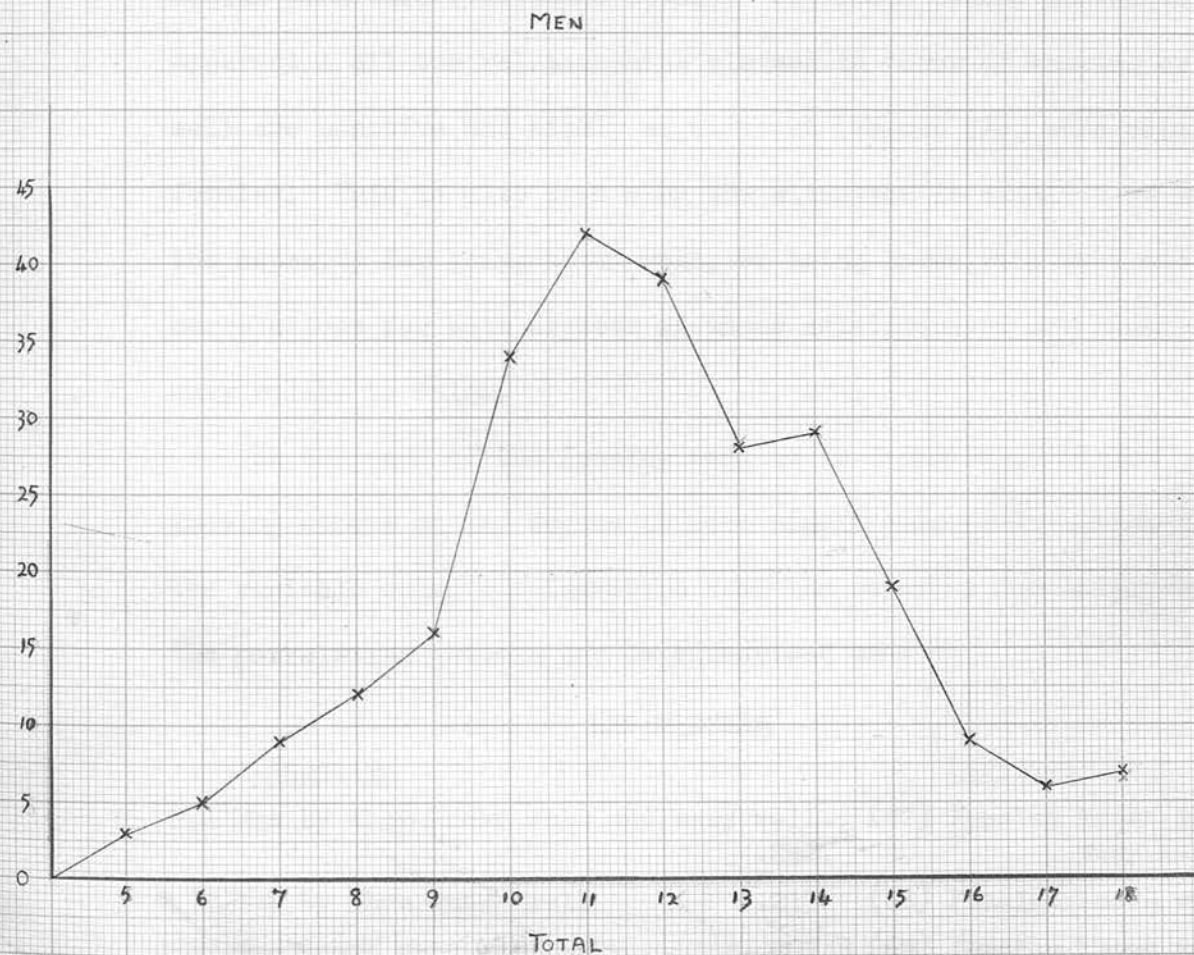
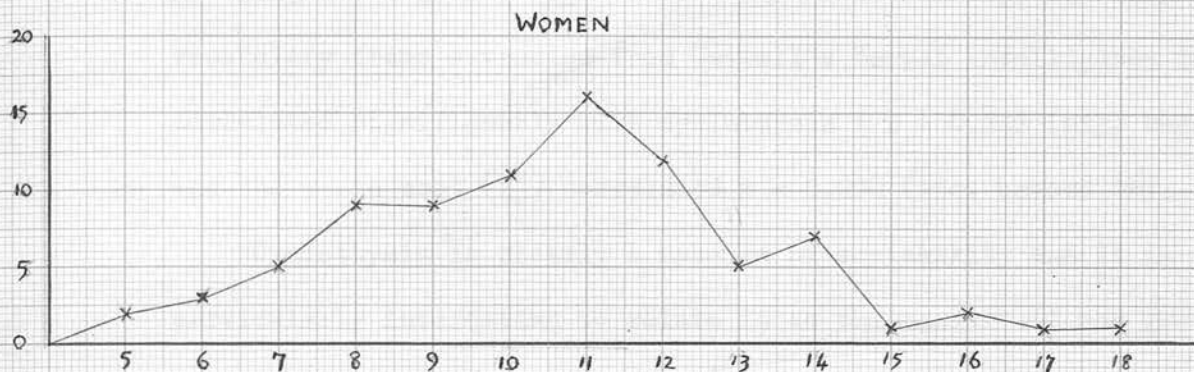
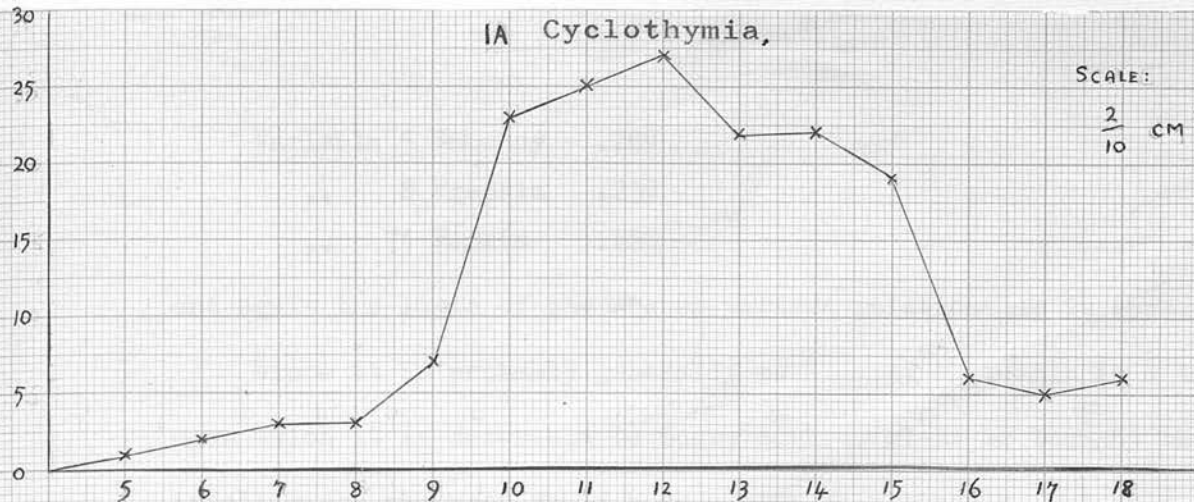
* The questionnaire will be found in the Appendix (B.)

+ Henceforth the variable numbers of factors referred to will be given in brackets.

IA Cyclothymia,

SCALE:

$$\frac{2}{10} \text{ cm} = 1$$



TOTAL

$$\bar{x} = 11.8 \quad \sigma = 2.72$$

Variable 5 Sanguency	.289
,, 8 Premsia	.239
,, 71 Parmia	.220

and again the logic of the answer pattern relationship is apparent.

Since it is probably generally considered that this is a trait upon which it is desirable to score high, it might be thought that the intelligence measures would have a high relationship, but only the vocabulary items extracted from Cattell's Verbal intelligence test (24) correlated significantly with cyclothymia : $r = 0.242$ (sig. beyond 1%) and the whole test (23) correlated $r = 0.200$ (sig. beyond 1%).

Cyclothymia is clearly a measure of sociability and it is particularly interesting to relate it to the measure of the group's social structure (Variables 65-82). Two facts become immediately apparent : all the relationships claimed in terms of knowing or knowing well are positive and highly significant (beyond 1%), when related to females. This is also true when the situation is examined in terms of the capacity for being known well, or being known very well and the correlations for both aspects of these relationships are negative when they relate to males.

In the case of the females too, it is found that the claims for knowing others at any degree is more highly related to a high score on the variable under consideration than the capacity for being known.

The correlation pattern may be summarised thus :-

<u>Cyclothymia</u>	
<u>Negative</u>	<u>Positive</u>
(76) Men by whom known well and very well. .242.	(72) Females known well and very well. .271
(74) Men by whom known well .215	(66) Females known well .244.
(68) Men known very well .207	(69) Females known very well.244
(75) Men by whom known very well .206	(78) Females by whom known very well .232
(71) Men known and known very well. .202	(79) Females by whom known well and known very well.217
(All these are sig. beyond 1%)	(77) Females by whom known well. .170
(65) Men known (sig. beyond 5%) -.154	

It may be remembered from the discussion on the assumptions underlying the M.T.A.I. that the desirable teacher was endowed with certain kindly and sociable qualities. This being so, it is not altogether surprising to discover that the Pro Scores (26) on the M.T.A.I. are the only remaining variable correlating beyond 1% with cyclothymia ($r = 0.170$). The Final score (28) correlated 0.156 while the Anti-score was also correlated at 0.148 albeit negatively with cyclothymia. These two results and the others quoted below in this section are significant beyond 5%.

The only other significant negative coefficient with cyclothymia was the interview grade (35) $r = -0.156$ which suggests that the interviewers favour those who are more aggressive, cool, and demonstrate qualities of firmness and precision, to those who are relaxed, eager to please and rather gentle, to interpolate from Cattell's traits on the factor.

Rather strangely, perhaps, Eysenck's neuroticism scores (38) produced a coefficient of $r = 0.151$ which suggests that the warm sociable person also has a higher degree of tension than the more schizothymic individual.

With regard to academic performance, only two variables appear to be related to cyclothymia : (19) First year education theory $r = 0.151$ and (87) Second year English $r = 0.141$. In Tarpey's study one college produced an r of -0.442 with teaching for this factor but the findings of the present investigation failed to support the first hypothesis that personality factors are related to final theory and practical examination performances.

Finally when subjects were asked to grade priorities in their interest from Pupils or Teaching Techniques or Subject matter, those who gave this sequence correlated with cyclothymia $r = 0.139$ which appears perfectly reasonable.

In considering this variable one of the two most perplexing things is in connection with the two indicated academic results. Since both approximate to a normal distribution of scores no convincing explanation has been found to put forward to account for the relationship at first hand. The other strange feature is the division of sexes into negative and positive groups of correlations. Almost certainly part of the explanation must be that the obvious skew of the Social Structure responses has influenced the results.

The other explanation is probably due to the fact that there are large numerical differences between the size of the sex groups and that the sex groups are different in their responses and their selections. Thus on cyclothymia the mean for the men is 10.612 with a standard deviation of 2.646 while the mean for the women is 12.394 with a standard deviation of 2.559. The application of a t-test to this observed difference, which is incidentally in the expected direction, reveals a significance beyond the 5% level. The question of the sex choices is dealt with in the discussion on variables 65 - 82 below (P.323).

Thus the variable fails to offer support for the first hypothesis although there is a slight relationship with theory performance in the intermediate years.

Variable 2. Factor B. General Intelligence.

This factor is described by Cattell (1957) as a measure of general ability but measures 'power' rather than 'speed' qualities and is said to have a low loading of about .3 to .4 on morale, persistence and strength of interest. (P.11). Although an intellectual measure, it appears as a personality variable and as such is used primarily to test the first general hypothesis in relation to student performance. The other intellectual measures are discussed below (P.231-41).

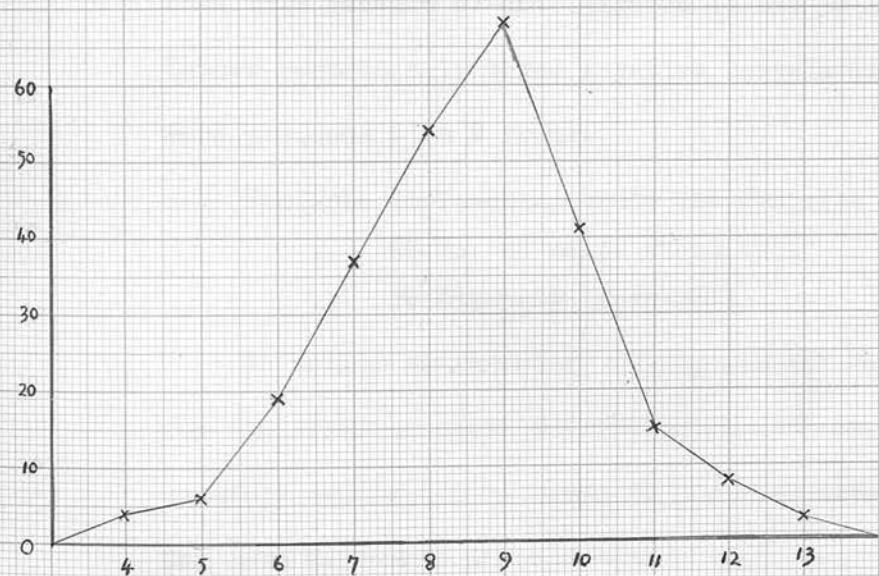
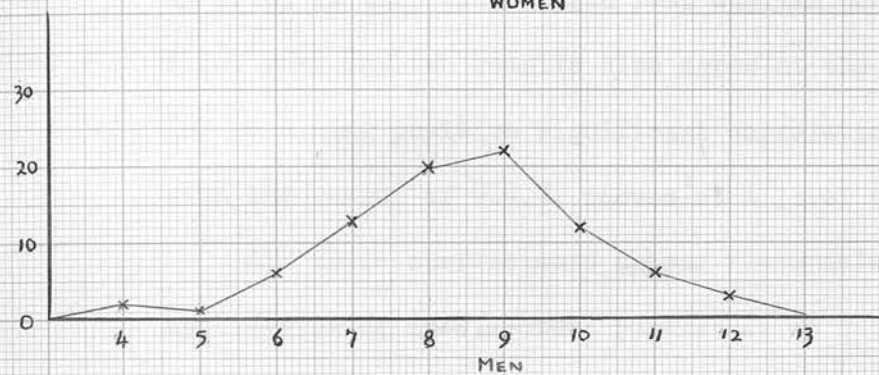
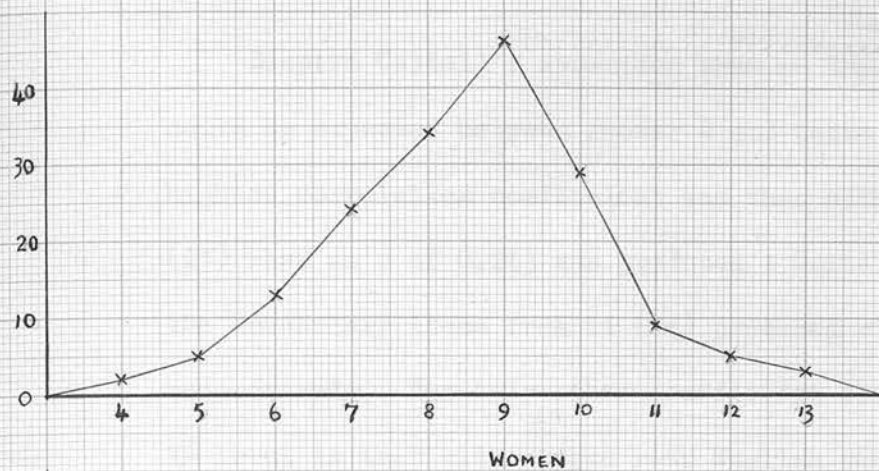
Analysis of the questionnaire from the stencil indicates that this time thirteen questions are used to measure intelligence. They are Questions No. 128, 53, 54, 77, 78, 101, 103, 127, 128, 152, 153, 177 and 178 and consist of items of analogies, similarities, odd ones out, and series : clearly the scores can range from 0 to 13.

On the 16 P.F. handbook, norms are given for 1128 students and 59 teachers both sampled in the U.S.A: subsequent to the administration of the questionnaire I.P.A.T. supplied standardization tables for the 1961-2 edition which show further differences while a visual inspection of Warburton's own calculations for 1121 British subjects plotted against U.K. and U.S.A. norms show further variations*(Start 1966 P.159). In the first named the student mean is 6.1 stens and the same for teachers on the general adult standardization and 5.5 on the student standardization. On the I.P.A.T. standardization tables 7.72 is given for the student population and 5.92 for the general population standardization, all in stens. Start's figure appears to show a score of 6 for the U.S.A. and 6.5 on U.K. norms.

In the present investigation a mean raw score of 8.52 was obtained which, converted on the I.P.A.T. norms, gives a score of approximately 6.5 stens : no significance was found between the raw scores of the men and women when a t-test was applied to the slight difference in favour of the latter.

* For convenience the norms for several studies are tabulated in the Appendix.(A.).

SCALE

 $\frac{1}{10} \text{ CM} = 1$ 

TOTAL

$$\bar{x} = 8,52 \quad \sigma = 1.70$$

Despite Cattell's assertion that no large degree of correlation could be expected between factor B and tests of intelligence, the highest correlation coefficient was that with Cattell's Culture Fair (21) when an r of 0.243 was produced : Cattell's Verbal Test (23) and the Vocabulary items from it (24) produced r 's of 0.174 and 0.163 respectively. The only other coefficient also significant beyond the 1% level is that with second year English results ($r = 0.188$), but the first year English results also agree at the 5% level with $r = 0.139$. The remaining positive significant correlation with factor B is that with the number of G.C.E. passes at A level ($r = 0.126$; sig. at 5%).

All these coefficients appear reasonable in that they denote the application of intellectual powers: it is only rather disappointing that this measure of intelligence is not related to more variables. Rather surprisingly three negative correlations significant beyond 5% were produced with B from:-

Variable 46 Teaching grade 1st Practice	- 0.146
,, 68 No. of males known well	- 0.124
,, 70 Students known well	- 0.122

No really satisfactory interpretation has been found to account for the first of these inverse relationships. The other two are possibly explicable in terms of the less intelligent students making the more expansive claims.

In spite of the slight relationship with the intermediate theory and teaching results the lack of significant correlations with the final criterion measures fails to support the first hypothesis.

Variable 3. Factor C. Emotional Stability

This measure of stability is used to consider the first general hypothesis although it also has relevance in relation to the fifth. This factor, like the previous one, is measured by thirteen questions but like A, and unlike B, loadings of 2 and 1 are possible on the responses giving a maximum range of 0 to 26. It is measured by the following questions with the highest loaded response indicated.

Question No. 4: (a) Always	Question No. 80: (c) Never
,, 5: (a) Yes (true)	,, 104: (a) Keep quiet
,, 29: (c) False	,, 195: (a) Can concentrate
,, 30: (a) True	,, 129: (c) False
,, 55: (c) Yes	,, 130: (a) Yes
,, 79: (c) False	,, 154: (c) Never
	,, 179: (a) Yes

The mean score for men and women students on the standardization tables are 15.50 and 16.03 respectively: on the present study they produced scores of 14.59 and 13.33 for these same groups. In terms of stens these represent 6 on the norms and 5.3 and 5.7 when the new scores are converted on the same tables. This is in line with most findings that students are scored lower on this factor than teachers, and that American scores are generally higher than those for this country:-

Handbook profile : students 7.3 stens

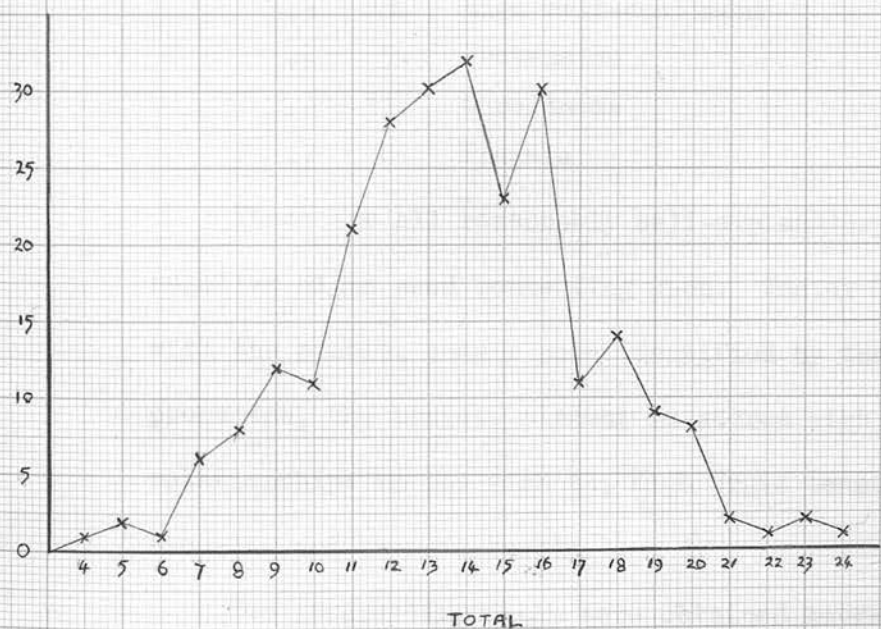
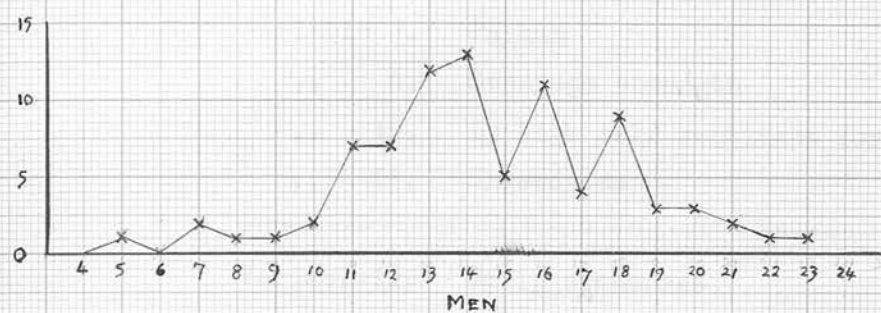
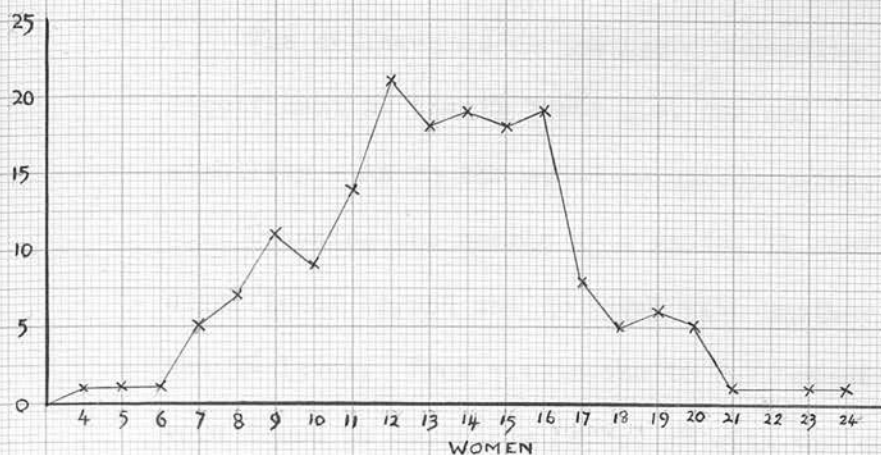
,, ,,	teachers 6.1	,,	General population standardization.		
,, ,,	students 5.3	,,	,,	,,	,,
Warburton's ,,	U.S. 6.9	,,			
,, ,,	U.K. 3.5	,,			
	Own. 2.0	,,			
Standardization table men	5	,,	Students on general population standardization		
,, ,,	women 5	,,	,,	,,	,,
,, ,,	men 5.3	,,	,,	student	,,
,, ,,	women 5.7	,,	,,	,,	,,

3c Emotional Maturity

149

SCALE

$\frac{2}{10} \text{ CM} = 1$



$$\bar{x} = 13.75 \quad \sigma = 3.55$$

The differences on the present results were found to be significant at the 1% level i.e. the men had the higher emotional stability - as on the standardization norms.

Treating the scores as a whole, 15 coefficients were produced significant beyond the 1% level with another 13 significant beyond the 5% level. From within the 16 P.F. questionnaire the following were found to correlate beyond 1% with the quality of Ego Strength or emotional stability:-

Variable 7.	Parmia	$r = 0.264$
,, 6.	Superego strength	$r = 0.254$
,, 15.	Q3 High self sentiment formation	$r = 0.250$
,, 11.	Shrewdness	$r = 0.178$

Variable 12.	Guilt proneness	$r = 0-.461$
,, 16.	High Ergic Tension	$r = 0-.460$
,, 7.	Parmia	$r = 0+.264$
,, 6.	Superego Strength	$r = 0+.254$
,, 15.	High Self-Sentiment	$r = 0+.250$
,, 9.	Protension	$r = 0-.196$
,, 11.	Shrewdness	$r = 0+.178$
,, 8.	Premsia	$r = 0-.176$

These are all reasonably self-explanatory and probably only the negative signs need commenting upon. Factor C has its orientation with the stable, mature pole identified by the high score but in Guilt proneness, the anxiety element is scored high hence the inverse relationship: so too with Q4, High Ergic tension, Protension/Relaxed security and Premsia/Harria.

Two interesting links were obtained between this stability measure and two yielded by Eysenck's neuroticism (.38) $r = -0.339$ and the Lie score $r = 0.282$ both significant beyond the 1% level. Again the negative sign is accountable in terms of the direction of scoring while the 'Lie' score agreement may be explained in terms of the loading on the factor C where changeableness and evasiveness figure as components.

The remaining positive coefficients significant beyond 1% are (χ^2) the estimates made by the students of their final teaching practice performance grades ($r = 0.213$) prior to having had experience of the first teaching practice, and the number of males known well and known very well (χ^2) $r = 0.179$ and (χ^2) the number of males known well. An explanation of the first is probably simple in that the more mature students forecast their performances higher than others and are more accurate in their estimates. The relation between factor C and the number of males known is rather more complex: it is eminently possible that the more mature women students do get to know more men students especially during the earlier part of college life, but close examination of the scores indicates that on variables (χ^2) and (71), the men claim to know significantly more of their fellows than the women claim to know. Since it has already been indicated that men have significantly higher scores on factor C it is suggested that this had helped produce the correlations under discussion.

The two remaining negative coefficients significant beyond 1% are the estimates of one's own and others' difficulties, variables 60 and 83, prior and subsequent to the second teaching practice with $r = -0.203$ and -0.218 respectively. Apparently, the least mature underestimate their difficulties and those of their fellows, while the more stable emotionally see greater problems for themselves and their fellows in college life and this appears to be supported by the negative coefficients with variables 59, 47 and 31, all of which are significant at the 5% level.

In rather the same way the remaining positive significant coefficients support the contentions made above: 45 and 43 support the contentions about the relationship between emotional maturity and estimates of one's own teaching performance, as well as about the connection between Factor C and the number of male students known well

and known very well, 65 and 76. The complementary situation is indicated, that the most mature are known by the least number of females and/or that the least mature are known by the largest number of females, by the correlation of the third variable with 77 ($r=-0.143$), and 78 ($r=-0.129$) and 79 ($r=-0.136$).

One might legitimately expect that there should be a significant correlation between the prime factor of Emotional Maturity and the Second Order Anxiety factor since C is one of the contributory weighted elements in this latter composite assessment so the correlation with 18 of $r=-0.546$, significant at 1%, is no surprise: the negative is the result simply of the directions of the measures. What is perhaps more surprising is that the Emotional Maturity is almost as closely linked with variable 17, the second order introversion - extraversion factor with $r = -.144$.

The remaining coefficient significant beyond 5% with Factor C is 24, Cattell's Vocabulary items indicating that the most stable do least well on this aspect of language facility and the least stable perform best: since performance in intelligence tests which have language components are liable to be influenced by environmental or class conditions (viz. Bernstein), then it is at least possible that facility of thought in language is liable to be highly developed in those who canalize their anxieties into channels of work involving for example, reading. Nevertheless, none of the final criterion measures correlates with this particular measure of Emotional Maturity at a significant level, so that the major hypotheses are not supported by this finding.

Variable 4. Factor E: Dominance

In relation to the first hypothesis it was felt that the quality of dominance might well prove to be associated with success in practical teaching rather than in theory work.

The factor is measured by means of eleven questions on which answers have a loading of 1, 2 and 0 thus giving a range of 0 to 22. The following are the questions which measure it with the highest loaded response indicated.

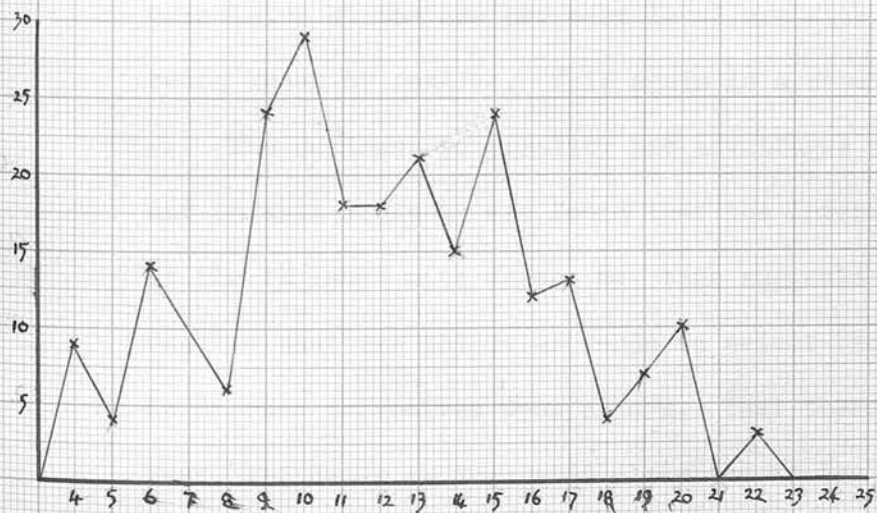
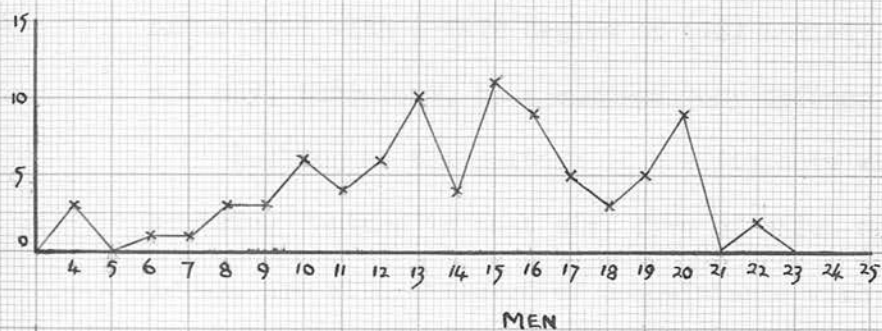
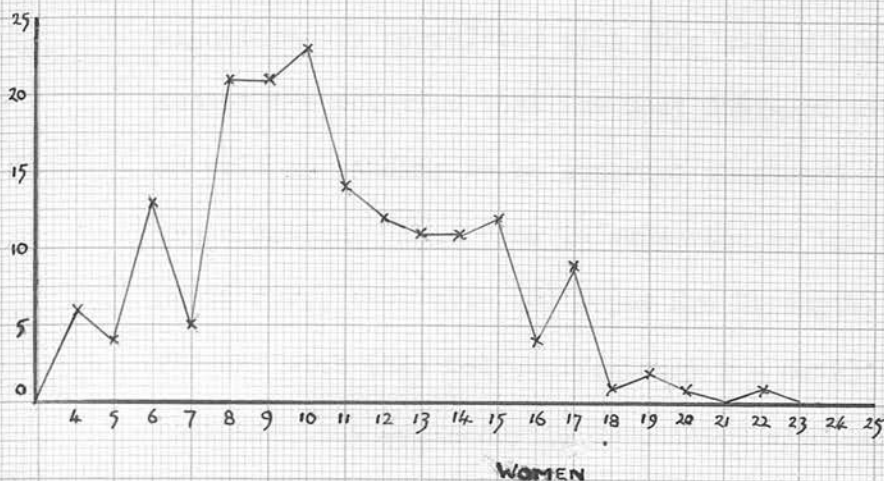
Question No. 6 : (c) No	Question No. 106. (c) Forceful
,, 7 : (a) Generally	,, 131. (a) Yes
,, 31 : (c) False	,, 156 (a) Yes
,, 56 : (a) Yes	,, 181 (a) Nerve in meeting challenges.
,, 57 : (c) False	
,, 81 : (c) No	

The raw scores for the men and women in the sample were 14.165, s.d. 4.189 for the former and 10.694, s.d. 3.646 for the latter, which produces a t-score result of 6.5058. indicative of a higher degree of dominance for the males significant far beyond the 1% level. In terms of stens, these approximate to the median scores on the tables available and are directly on the mean for the women student standardization tables and a little above that for the men's mean of 13.94.

Dominance is reasonably explicable in terms of association with (7) Parmia or the adventurous quality and produces the highest positive coefficient ($r = 0.349$) similarly (5) Surgency ($r = 0.327$) is a straight-forward relationship. The remaining positive correlation significant beyond 1% is (9) Protension ($r = 0.282$) and again the link is not difficult to see. But the highest negative correlation is with 15, Self-Sentiment Formation, $r = -0.387$ indicating a tendency for the most submissive to have the most controlled, exacting will power and the most aggressive and competitive to have the lowest self sentiment formation. Since Q.3(15) has the highest loading, according to Cattell, on the second order Integration/Anxiety factor one might expect to see this

SCALE

$$\frac{2}{10} \text{ CM} = 1$$



$$\bar{x} = 11.85 \quad \sigma = 4.16$$

related significantly to Dominance as well, but the next highest negative coefficient is with the Second Order Introversion Factor (17), $r = -0.307$. But since Self-Sentiment Formation is not significantly correlated with this second order factor we must accept the solution that the most dominant tend to be extraverted as well as tending to be somewhat abandoned in their personal organisation. This view is supported by the remaining coefficients on 16 P.F., that with (6) Super Ego Strength, $r = -0.190$ (sig. beyond 1%) and with (14) Self-Sufficiency $r = 0.123$ (sig. beyond 5%) which indicate that Dominancy is associated with casual, undependable qualities and an inclination to rely on Group approval. It is also associated with a fair degree of (18) Anxiety, $r = 0.129$ (sig. at 5%) and may, therefore, be a compensatory defence mechanism.

Looking at the pattern of coefficients with Dominance, the most striking feature is that six, five of which are significant at the 1% level, are with measures of acquaintance with males. That is to say the capacity for being known in some degree by males is related to dominance as well as the tendency to claim to know more males. On the other hand six coefficients significantly but negatively correlated at the one per cent level are with measures of knowing or being known by females. This again is a straight forward relationship.

The dominant personality has advantages in a number of situations and on this study it was found that the Interview grades (35) correlated at the 1% level with factor E: this suggests what most psychologists realise that the interview tends to select those who have the capacity to impress themselves upon others. That these are not necessarily the best candidates is suggested elsewhere in the study of the Final results. Here it must suffice to indicate that although there was a marked tendency for the most dominant to estimate their performances as high and to have a generally high level of Aspiration (viz. Variables: 86,

$r = 0.240$, 85, $r = 0.190$; 41, $r = 0.184$ all sig. at 1% and the following at 5%: 44, $r = 0.158$; 43, $r = 0.148$), their academic performance is generally inferior: this trend is not strongly marked but is indicated by the following:

Variable 89 Education Theory Year 2 $r = -0.127$ Sig. 5%

,, 22 Mathematics ,, ,, $r = -0.125$,, ,,

Three coefficients significant beyond 1% and negative remain.

Variable 53 in which the students were asked to rank in order of importance "the subjects they studied, 2 the techniques used in teaching, or 3, the pupils taught. The scoring was arbitrary, in that the writer determined the pattern in line with 'progressive' thinking in education as this key indicates:

Order	3	2	1	6 points
,,	3	1	2	5 ,,
,,	2	3	1	4 ,,
,,	1	3	2	3 ,,
,,	2	1	3	2 ,,
,,	1	2	3	1 ,,

This produced $r = -0.181$ with dominance suggesting that the most dominant placed their subject matter as of primary importance while the least dominant regarded the pupils as of main concern.

The numbers warrant very little deduction on the correlation of Dominance with variable 58, Language. The students were rated by a number of members of staff dealing with Welsh on their understanding of the language. The scale ranged from 0 for monoglot English to 4 for fluently Welsh. In the comparison $r = -0.177$ suggesting that the most Dominant^{are monoglot}. Tempting as it is to speculate on the historical pattern of racial conquest, the evidence is not really good enough in that the number of fluently Welsh in the sample is small and previous work on Test Construction in a mixed language setting points the need for a more refined method of sifting degrees

of bilingualism than a rating scale administered by an expert (Jenkins 1962).

Finally the Pitts Emotional Maturity Scale ($\frac{M}{M+1}$) 52 produced $r = -0.165$ with dominance indicating that the most mature students do not feel the need to dominate or that the least mature emotionally are the most domineering.

Thus, the variable of Dominance, in spite of its inverse relation with some theory results fails to reach the level of significance in its correlation with practical performance, so that the hypothesis with regard to it is not proved.

Variable 5. Factor F Surgency

This factor is also used to test the initial general hypothesis, and is measured by thirteen questions which with the scoring 2, 1, 0, gives a possible range of from 0 - 26. Thus:-

Question No.	8: (c) False	Question No.	132: (a) Yes
,, ,,	33: (a) Yes	,, ,,	133: (a) Yes
,, ,,	58: (a) More than average	,, ,,	157: (c) False
,, ,,	82: (c) No	,, ,,	158: (c) False
,, ,,	83: (a) True	,, ,,	182: (a) Yes
,, ,,	107: (c) No	,, ,,	183: (a) Yes
,, ,,	108: (c) False		

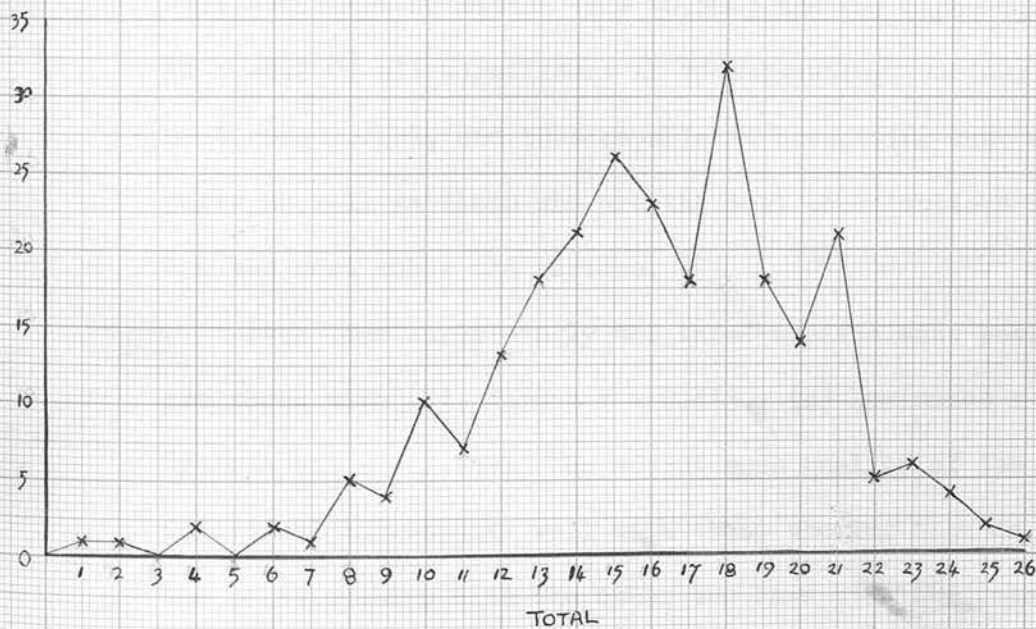
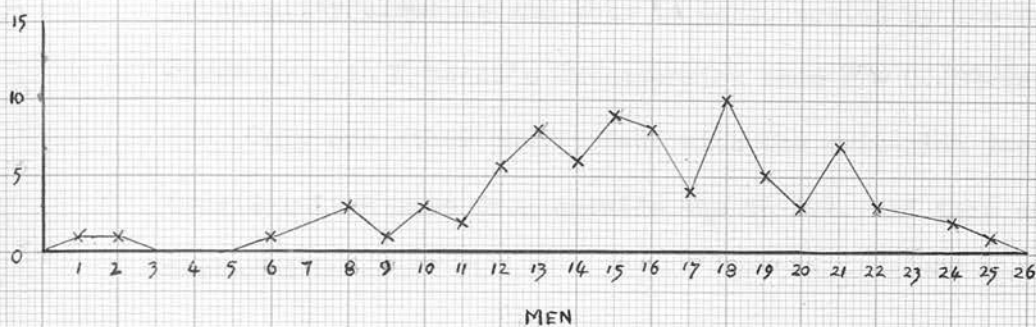
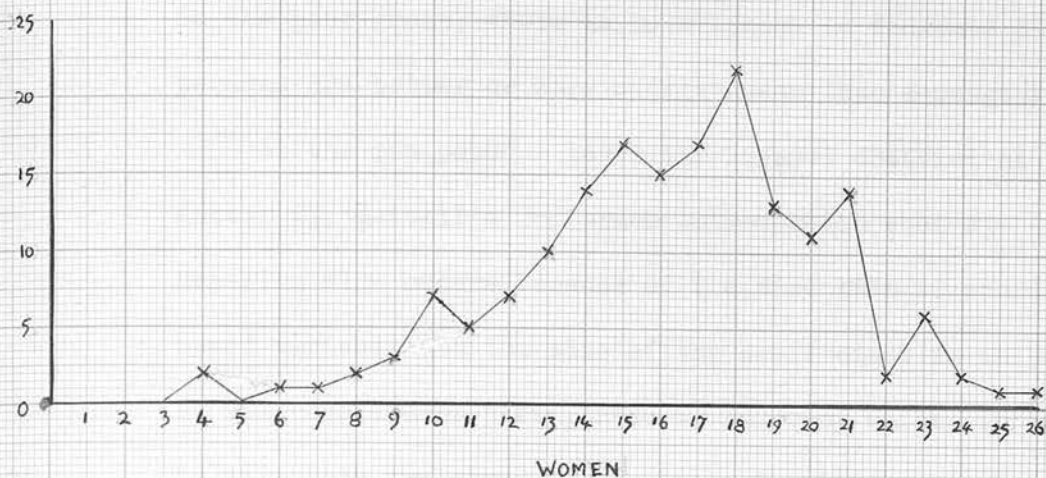
The raw score mean for the whole group was 16.04 with no significance at 5% between the men's mean of 15.53 and the women's one of 16.29. In terms of sten scores, these lie within the centre of the norms referred to above but are on the high side of average for all groups except those based on American students. This suggests that the students were generally enthusiastic (co-operative and frank) which in line with what has been said about the college government and the co-operative response of the students to the enquiry.

This particular factor of 16 P.F. agrees with only one variable which may be termed academic performance : this is the correlation with the first year Education Theory results with $r = 0.123$ (sig. at 5%). A possible explanation for this is that the work for the students is new to them in this subject and those who absorb the normal subject matter and attitudes are the more alert and enthusiastic individuals.

The only other coefficients significant beyond the 5% level are with the measure of (73) the total number of students said to be known in any degree and (67) the numbers known very well, while the measure of the number of females known well (66) is just significant at 0.121. The only interesting point with regard to these is that although there

SCALE

$$\frac{2}{10} \text{ CM} = 1$$



$$\bar{x} = 16.04 \quad \sigma = 4.25$$

is a tendency for surgency to be associated with claims to know others in the peer group, there is no evidence to indicate that high surgent persons are better or more widely known than desurgent ones.

At the one percent level the highest coefficient is the one with factor 17, Cattell's 2nd order Introversion when $r = -0.747$: the negative sign occurs because of the direction of scoring on the last named variable and the size of the coefficient is in part explained by the constituent part played by surgency which, in turn, is legitimately explained by the logical relationship between the two personality elements and this is corroborated by the correlation of Surgency with Eysenck's Extraversion when $r = 0.483$ (sig. beyond 1%).

Only one other coefficient with the criterion vector under consideration came from outside the 16 P.F. and this was (55) Age measured in month when $r = -0.256$ (sig. beyond 1%) indicating that, in line with common observation, the young are the most surgent.

On the negative side, (14) Self Sufficiency ($r = -0.318$), (15) Self Sentiment Formation ($r = -0.200$) and (6) Super ego Strength ($r = -0.200$) all significant at 1% suggesting, variously, that the most resourceful, and those capable of exercising most exacting will-power, as well as those who are the most conscientious and persistent, are the most sober and serious.

Even less surprisingly the three coefficients positive beyond 1% are those with (7), Parmia $r = 0.413$., (4) Dominance $r = 0.326$ and (1) Cyclothymia $r = 0.289$. The adventurous quality of the high Parmia individual corresponds well with those scoring high on Surgency while the relationships with the other two have been indicated above.

Thus in spite of the interesting relationship found the measure has only a modicum of agreement with performance in terms of a first year theory result so that this predictor measure cannot be said to support the initial hypothesis.

Variable 6. Factor G. Superego Strength

Cattell identifies the main component element in this factor as energy and persistence and suggests that it corresponds to the analysts' superego. The writer has long sympathized with the view that the quality of persistence, the product though it may be of other forces, probably operates in such a way that those high on this quality perform best in almost every field where perseverance is required, including most academic contexts: this, given the proviso that there is a sufficient level of intellectual ability adequate for the performance of the demands being made upon it. Presumably, at College level, the entrance requirements select students who by their examination success demonstrate not only that they have the particular skill required to pass examinations but also that they have the necessary minimum level of intellectual ability required to pursue and duly profit by the course. It is as likely that the necessary character elements in personality are also involved in this previous success. This variable again seeks to establish support for the initial general hypothesis.

In the 16 P.F. Superego strength is measured by 10 questions with the responses 2, 1, 0 giving the 0 - 20 range. The most weighted responses were:

Question No. 9: (c)	Question No. 134 (a)
,, ,, 34: (c)	,, ,, 159 (c)
,, ,, 59: (c)	,, ,, 160 (a)
,, ,, 84: (c)	,, ,, 184(a)
,, ,, 109: (a)	,, ,, 185 (a)

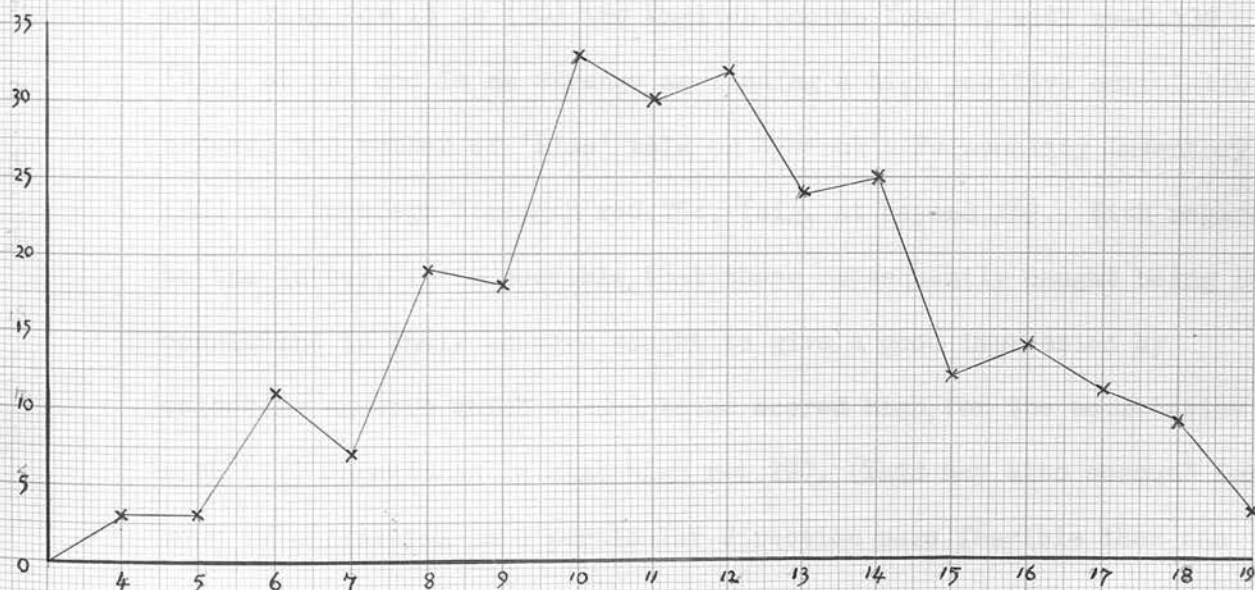
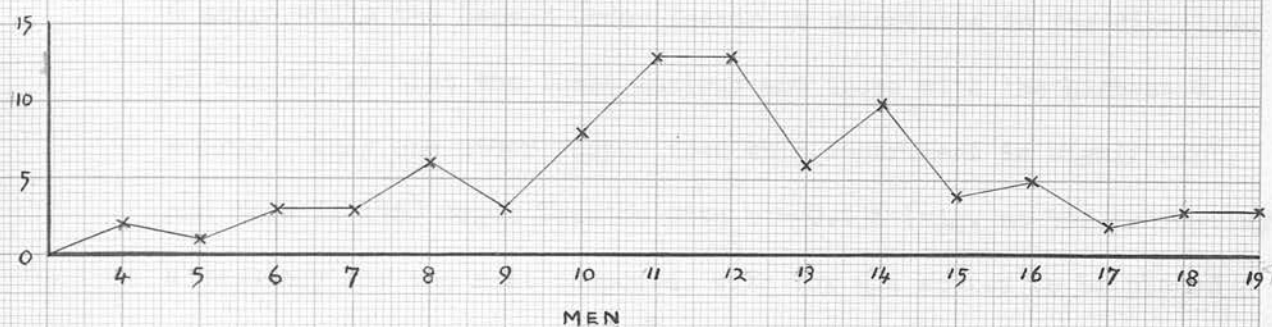
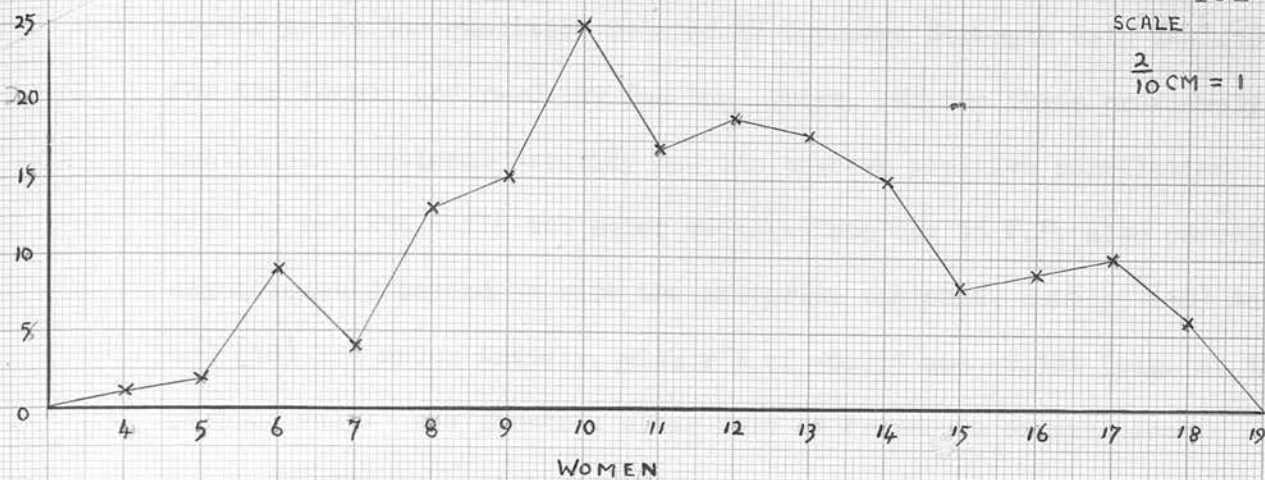
The mean raw score for the whole group was 11.75, s.d. 3.26 with no significant difference between the men's mean of 11.871 s.d., 3.439 and that of the women, slightly lower at 11.688 s.d. 3.176. In comparison with the original handbook norms these scores are high, and in line with Warburton's but are below the most recently supplied I.P.A.T. norms.

6G. Super-ego Strength

162

SCALE

$\frac{2}{10 \text{ CM}} = 1$



TOTAL

$$\bar{x} = 11.75 \quad \sigma = 3.26$$

As already indicated above (4) Submission and (5) Desurgency appear to be the qualities related to Superego Strength with $r=-0.189$ for the former and $r=-0.199$ for the latter. Of the three previously mentioned, Emotional Maturity has the highest positive correlation with G, $r=0.254$ while two other vectors from the 16 P.F. also correlate significantly beyond 5% with the criterion variable, namely, (10) Autia and (18) 2nd order Anxiety, with r 's of -0.159 and -0.181 (sig. at 1%) respectively: the former's other pole is Praxernia or practical concern with essentials, thus explaining the association with high G score, while the Second Order factor is orientated in the direction of Anxiety so that the least anxious are those with the highest G scores. Only one other factor from this instrument is significant, and this is (16) Ergic Tension with $r=-0.136$ (sig. at 5%) indicating a tendency for the most composed, with low Q.4 scores to be placed as high on persistence.

The only remaining negative correlation gives rise to some perplexity, for it is (20) the English scores Year I, with $r=-0.132$ (sig. at 5%) and is as strange as finding a high positive correlation between the number of 'Lies' told on Eysenck's Personality Inventory (40) and Superego Strength $r=0.254$, (sig. at beyond 1%). With regard to the latter, it is possible that those subsequently caught being inconsistent in their answers sought to give a good impression by selecting answers which tended to be scored high, for the correlation with (11) Shrewdness is also high $r=0.227$. (This may also account for much falsification in a particular direction more feasible than the other items). Unfortunately this does not account for the negative correlation with 1st year English. Tentatively the following suggestion may be offered: the English course at college level may require students to move from accepted canons of taste, and in the

breaking down of preconceived ideas before attempting to build better standards of judgement, those with few 'quality schema' have the advantage. That this is a temporary advantage only is indicated by the positive coefficients of academic subjects with the criterion.

A high degree of Persistence was found to be associated with a similar level of (15) Self Sentiment Formation ($r = 0.334$) as well as with a high level of Aspiration in Teaching (from the estimates of Final Teaching Practice Grade (42) prior to the first one, $r = 0.126$ and (43) estimate of First Teaching Practice Grade prior to the event $r = 0.178$ (sig. at 5% and 1% respectively). Moreover, there is a significant degree of relationship between the criterion variable and the actual teaching grades realized in the teaching practices of the first and second years with r 's of 0.162 and 0.209 respectively, both of which are significant at 1%, and with the third year teaching result at the 5% level with $r = 0.120$. There is also a significant correlation between Superego Strength and the Mathematics results of first and second years.

Thus the initial hypothesis that the quality of persistence, which is generally regarded as being important in educational contexts, would be found to be related to student performance in this study is proved in so far as first, second and third year results are concerned: this applies to both theory and practical teaching performance.

Variable 7. *Parmia* - *Threctia*

This factor of 'shyness' is seen by Cattell as 'one of the most highly inherited' of personality factors by which is meant that this is one of the most clearly based in constitution. As well as testing the general hypothesis this predictor variable may be regarded as relevant to the hypothesis relating to introversion-extraversion. In the 16 P.F. questionnaire factor H is measured by only 7 questions with the 0, 1, 2 scored responses giving a range 0-14 as follows :-

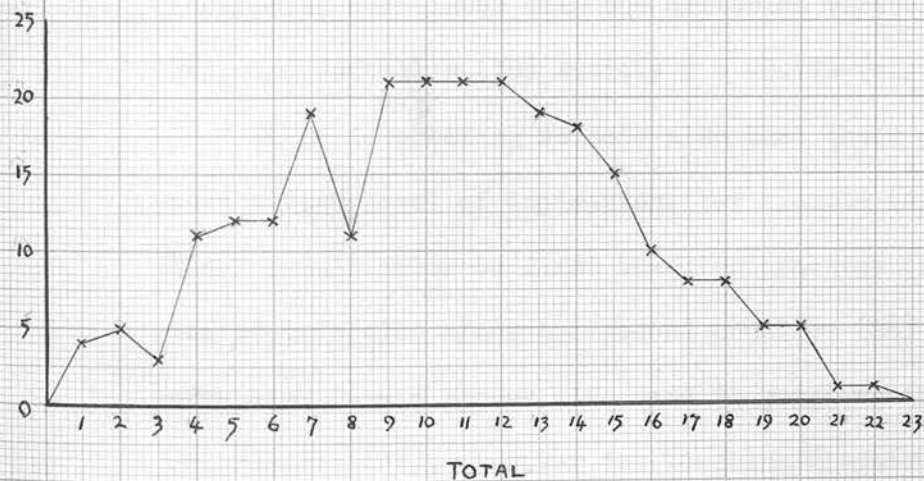
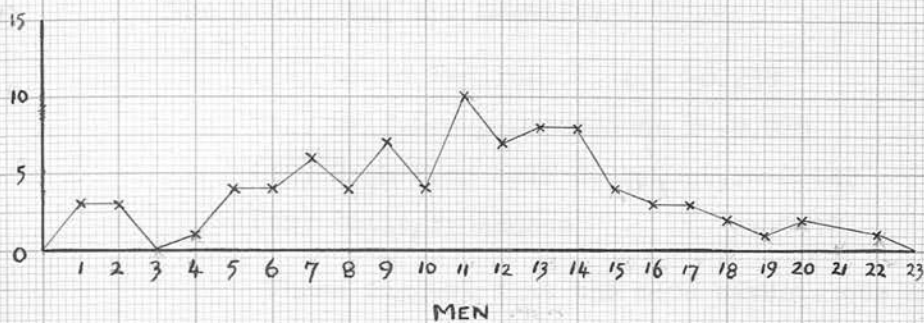
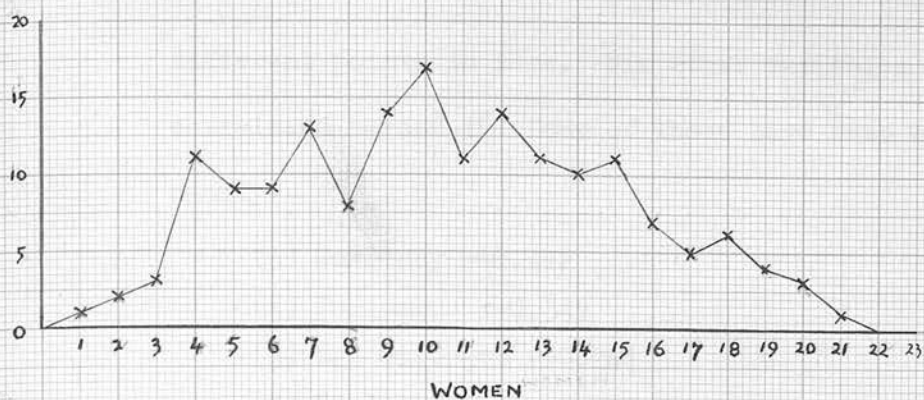
Question No. 36 : (a)	Question No. 111: (a)
,, , 61 : (c)	,, , 136: (a)
,, , 86 : (c)	,, , 161: (c)
	,, , 186: (a)

The sample's mean on this factor was 10.70 with the men's mean of 10.82 not significantly higher (at the 5% level) than that of the women at 10.63. In terms of stens, these are rather on the low side as compared with those from most of the other sources previously indicated, suggesting a fairly high degree of shyness or timidity in this body of students. Thus one might expect that there would be some degree of relationship between this measure and teaching practice performance, especially, as well as with some of the other measures of personality.

To consider the latter relationships first, it is not surprising to find factor H forming the most highly correlated coefficient with the second order factor of Introversion with (17) $r = -0.704$ since it is one of the three weighted factors making up that second-order factor: the negative side merely refers to the different directions of scoring the variables. On the positive side the second highest coefficient, significant beyond 1%, was with (39) Eysenck's Extraversion indicating that this aspect of personality is highly structured and stable in that the results of two tests are consistent, even when administered at

SCALE

$$\frac{2}{10} \text{ cm} = 1$$



$$\bar{x} = 10.70 \quad \sigma = 4.54$$

different points in time. Six other variables from the 16 P.F. are correlated beyond 1%: four of these have been considered already namely:-

- (5) Surgency $r=0.412$
- (4) Dominance $r=0.349$
- (3) Ego Strength $r=0.264$
- (1) Cyclothymia $r=0.220$

The other four are negative :

- | | | |
|--------------------------------|--------------|----------------|
| (16) Ergic Tension | $r = -0.238$ | Sig. beyond 1% |
| (14) Self-Group Dependence | $r=-0.225$ | ,, ,, ,, |
| (15) High/Poor Self Sentiment, | $r=-0.142$ | ,, ,, 5% |
| (12) Guilt/Proneness | $r=-0.124$ | ,, ,, ,, |

These suggest that the more adventurous have the lowest Ergic Tension (16) and a fair degree of (12) Confident Adequacy but at the same time that they have a rather poor (15) Self-Sentiment formation and tend to be Group rather than Self-Dependent (14). Yet high Parmia individuals are also generally free from Neuroticism (38) for Eysenck's instrument correlates with the criterion variable $r=-0.154$ (sig. beyond 5%), and Cattell's (18) Anxiety $r = -0.176$ (sig. at 1%).

It is interesting to note also that those who score high on Parmia have a high level of Aspiration, for example (42) the estimate of the Final result prior to first teaching practice ($r=0.232$ sig. beyond 1%) and of this also after the second practice (86) with $r=0.236$. Those with high Parmia scores also tend to judge their performances high in retrospect; (45), After 1st Teaching Practice $r=0.175$ and (85) after 2nd Teaching Practice (46) $r=0.163$ (sig. at 1%). They also claimed to have fewest difficulties after their second Teaching Practice (84) $r=-0.120$ (sig. at 5%) and tended to show the greatest difference in their estimates of their own and others levels of difficulties (62) $r=0.136$, (sig. at 5%).

Thus it appears that the quality of confidence reflects itself in the capacity to judge one's past performance reasonably accurately and to cause one to have a high level of aspiration. But since this does not coincide with scores obtained on actual performances, except in the first year, it appears that other factors became increasingly important as the course proceeded.

The two hypotheses that introverts perform best in theoretical performance and extraverts perform best in practical ones are not supported by the evidence from this predictor variable; nor is the initial hypothesis supported by it.

Variable 8. Premsia - Harria.

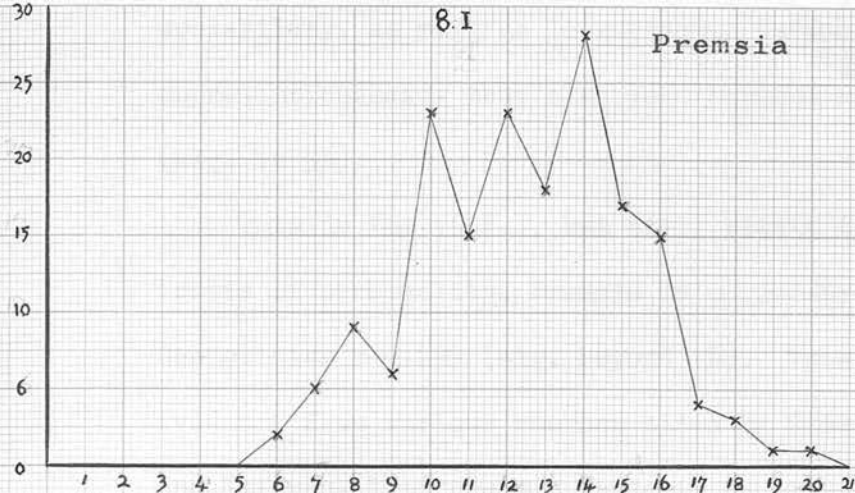
This factor represents the sensitive - tough dimension of personality first identified by Williams James as the "Tender - versus - Tough" continuum of temperament. It is interesting to note that the sample group was placed nearer the Harria end of the continuum (i.e. towards the tough realistic end) than the norms from most other researches. At the same time, as is generally reported, the women were significantly higher (at 1%) on this dimension than the men with the respective means 12.51, and 9.66 and a group mean of 11.56.

Ten questions with a 0,1,2 scoring give a range of 0 - 20 with the maximum weighted response indicated:

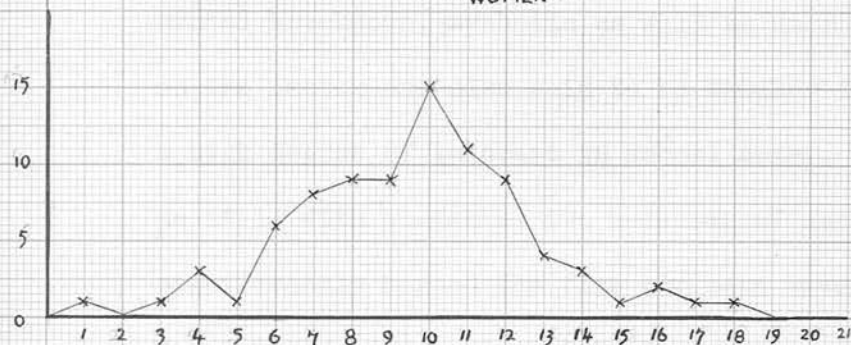
Question No. 11: (c)	Question No. 112: (a)
,, , 12: (a)	,, , 137: (c)
,, , 37: (a)	,, , 138: (a)
,, , 62: (c)	,, , 162: (c)
,, , 87: (c)	,, , 163: (a)

In all there were thirty variables correlated significantly beyond the five per cent level, half of them negative : of these thirty, twenty are significant beyond one percent, again half of them negative. The most striking feature of the correlational pattern is that females by whom 'known well' in varying degrees as well as females indicated as 'being known' in varying degrees form positive coefficients ranging from 0.341 to 0.144 with five of the six significant at the highest level: six of the negative coefficients significant beyond one per cent are with the male scores on the Social Cohesion Questionnaire and again the capacity for 'being known' comes higher than the claims for 'knowing' others, the r's ranging from -0.368 to -0.199.

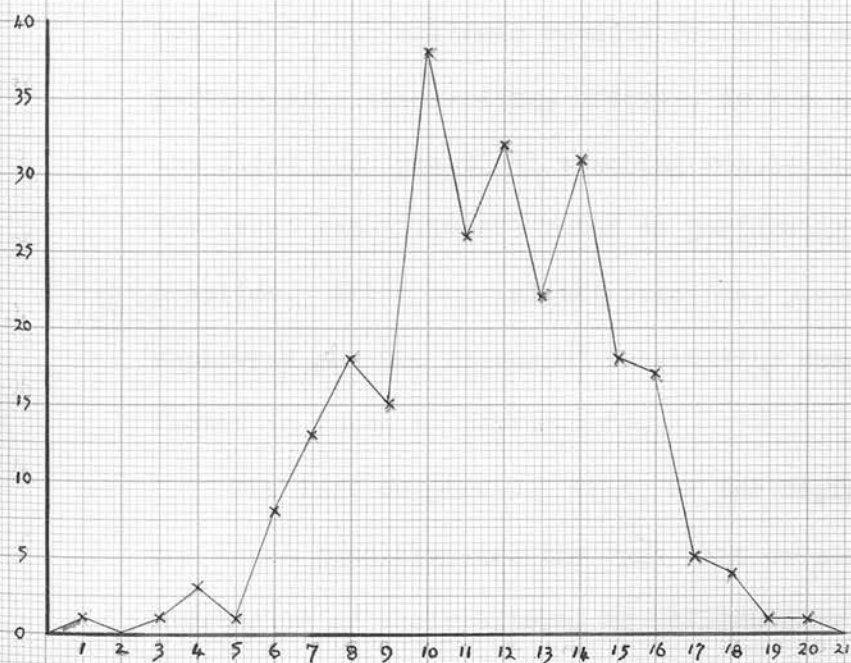
A number of other 16 P.F. factors also correlated significantly with Premsia : (10) Autia 0.291, (12) Guilt Proneness 0.252, (1) Cyclothymia 0.238, (3) Emotional Maturity -0.175, all at 1% and (16) Ergic



WOMEN



MEN



Total

$$\bar{x} = 11.56 \quad \sigma = 3.18$$

Tension 0.132 and (11) Shrewdness -0.121 at 5%. Thus the more sensitive are inclined to Bohemian introversion, insecurity and to sociability, as well as to emotional instability, tension and unpretentiousness: they also tend towards high (18) Anxiety, $r=0.122$ (sig. at 5%).

Outside the 16 P.F. but still within the realm of non-intellectual traits of personality, Premsia is correlated with (38) Eysenck's Neuroticism $r=0.299$ (sig. beyond 1%). This accords well with the evidence from various sources cited by Cattell e.g. Wittenborn, Lorr, and Huffman, that premsia tends to be significantly associated with mental breakdown, psychotic as well as neurotic. Children scoring high on the factor are also said to be teacher-dependent as well as having a high degree of interest in school work. In this research, concerned as it is with students, two measures of academic performance correlate significantly beyond the five per cent level (89) Education Year 2, $r=0.159$ and (87) English Year 2, $r=0.130$.

No suggestion can be offered as to the reason why neither first nor third year academic results correlate with the factor. What is particularly interesting, however, is the negative correlation with the first year practical teaching result (46) $r=-0.139$, indicating that the least sensitive are rated as performing better on this first practice. After the initial practice, presumably, other factors supervene and the degree of sensitivity ceases to be a significant factor in teaching performance.

The last suggestion, that, at the beginning of the college course the least sensitive are the ones that create the most favourable impression on their tutors, as reflected by their assessments, is further supported by the correlation of Premsia with (35) the Interview grade, $r=-0.254$ (sig. beyond 1%).

It will come as a surprise only to those who subscribe to the myth of the fiery celt that Premsia is also highly correlated with (58) Language ($r=0.197$ sig. beyond 1%) i.e. the most fluently Welsh are the most sensitive. Too much should not be construed from this finding for two reasons: the number of subjects in the above mentioned category is small and it is also predominantly female.

The remaining coefficient significant at the one per cent level is with (23) Cattell's Verbal Intelligence Score ($r=0.181$). What is strange is that the correlation of the variable under consideration with Cattell's Non Verbal Intelligence is negative ($r=-0.180$). Thus it appears that the most sensitive perform better on verbal material than on non-verbal material. It is possible that the least sensitive are less affected by the more unusual test material and that this produces the negative correlation with the non-verbal test.

Another unexpected result is that Premsia also correlates positively with (51) Pitts' Emotional Maturity Scale (M-I) at the five per cent level, $r=0.156$. It may be that in the same way that student disciplinary committees mete out more severe penalties to their fellows than would tutorial bodies so on these tests the more mature appear as the more sensitive. Unfortunately, this is not consistent with the previously reported negative correlation with Cattell's Factor 3, Emotional Maturity, and it is evident that the two measures are recording different aspects of maturity.

There is some slight evidence of association between Premsia and the tendency to have a low level of Aspiration as given by (44) Theory Grade Estimate at end of first year $r=-0.153$ (sig. at 5%); on the other hand after the event, the more sensitive appear to have a more accurate perception of their performance as measured by the Judgment Discrepancy index (64) $r=0.197$. The greater acuity shown here also extends to the Estimate of One's Own Difficulties (30)

$r = -0.124$ (sig. at 5%)

Thus, although this predictor variable correlates significantly with three criterion measures of performance the lack of agreement with the final results fails to support the initial hypothesis.

Variable 9. Protension - Relaxed Security

To some extent this predictor may be considered not only in relation to the general hypothesis, but also with regard to the dual hypothesis that whereas neuroticism may be generally positively related to student performance, a high neurotic score will tend to be negatively related to such action.

Protension, the contraction from "Projection and inner tension" is found by Cattell to feature not only in abnormal populations, but also in normal ones and may be associated with high performance, the creative fields of religion and science. On the 16.P.F. the factor is measured by ten questions with a 0,1,2, scoring giving a range 0 - 20 with the most weighted response indicated :

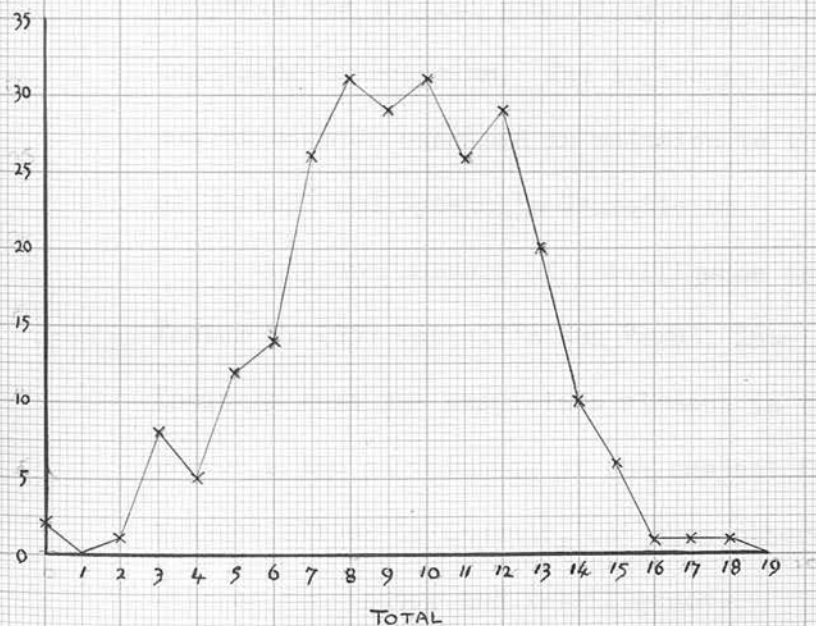
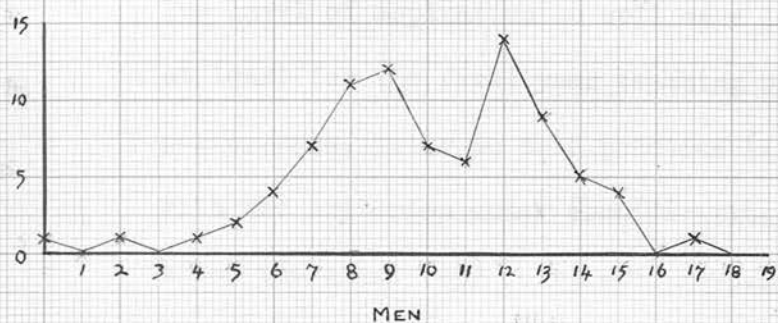
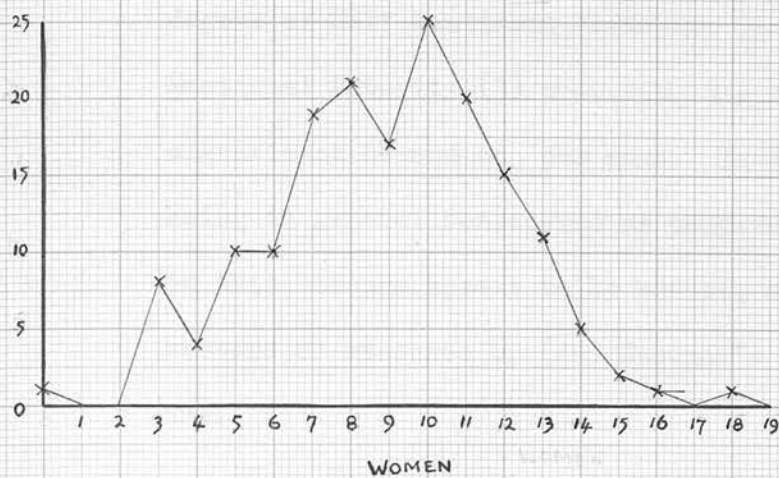
Question No. 13: (c)	Question No. 89: (c)
,, 38: (a)	,, 113: (a)
,, 63: (c)	,, 114: (a)
,, 64: (c)	,, 139: (c)
,, 88: (a)	,, 164: (a)

In the present sample a mean of 9.35 was obtained with the men's 10.04 significantly higher at the five per cent level than that of the women with 9.01. These are higher than the norms for American students and teacher groups but agree well with those of, for example, Warburton in the U.K.

This factor of protension does not appear to be related to many performance measures although it is related to a number of these as well as to a larger number of personality assessments. The factors positively associated with high protension (beyond 1%) are (18) Second Order Anxiety, $r=0.410$, (16) High Ergic Tension, $r=0.355$, (4) Dominance ($r=.282$) (12) Guilt Proneness, $r=0.234$, all from the 16 P.F. and (84) the estimate of one's difficulties after the second teaching practice. $r=0.253$. At the lower level of significance, (38) Eysenck's Neuroticism correlates $r=0.148$ as well as (13) Radicalism $r=0.125$.

SCALE

$$\frac{2}{10} \text{ CM} = 1$$



$$\bar{x} = 9.35 \quad \sigma = 3.09$$

On the negative side, Protension is associated with (15) a low degree of Self Sentiment Formation ($r=-0.312$) and a low degree of Emotional Maturity (3) $r=-0.195$, the only two 16 P.F. factors, both significant beyond one per cent. In spite of a high protension score being in general considered as undesirable, individuals scoring high on this measure appear to be honest, or at least consistent in their answers as measured by (40) Eysenck's Lie scale, $r=-0.278$ (sig. beyond 1%).

High Protension in individuals appears to be associated with a low level of Aspiration as well as a low level of Judgment of performance at least for the first year teaching practice. Thus the estimate of performance, prior to this practice (42) correlates $r=-0.198$ (sig. at 1%) with the criterion under consideration, while the judgment of performance, after the event (45) correlates $r=-0.238$ (sig. at 5%) with it. However, the only performance measure correlated with Protension is the theory grade in Education for the Second Year (89) $r=-0.164$ (sig. at 1%). This supports the initial general hypothesis, but not the specific contention regarding neuroticism. The influence of the highest degree of neuroticism is examined in relation to the second order Anxiety factor of Cattell and Eysenck's Neuroticism.

Only one measure of intelligence is significantly correlated with Factor 1, (22) Cattell's Non Verbal Intelligence $r=-0.136$ which may indicate that the suspicious element in the high protensive personality prevents the performance of the subject from being adequate where the subject matter is unusual, but that otherwise there is no relationship between the factor and intelligence.

The remaining six positive negative correlations which are positive beyond five per cent all relate to measures derived from the Social Structure questionnaire. Two of these are significant beyond one per cent (66) the Number of Females Known well $r=-0.213$ and (72) the Number

of Females Known and Known very well $r = -0.187$. This inverse relationship between Protension and the number of females known is complemented by the measures indicating the degree of status among women enjoyed by those with a high score on their criterion variable: (78) the Number of Females by whom Known very Well $r = -0.160$ (79) the Number of Females by whom Known well and very well $r = -0.152$ (77) the Number of Females by whom Known well $r = -0.141$. The question is, does this pattern indicate a casual relationship in the direction indicated i.e. suspicious, self sufficient individuals know few females and are known by few of them, or are there other predisposing factors? For example, the men have a significantly higher protension score than the females and so these correlations may simply be a reflection of a sex difference. But it is probably a little deeper than this, for Cattell reports that in group dynamics experiments the protensive personality is rated as unpopular, and in the current investigation the last coefficient significant beyond five per cent is with (67) the Number of Students very known, $r = -0.121$ so that the insularity apparently extends over the sex division

Variable 10 Autia - Praxernia

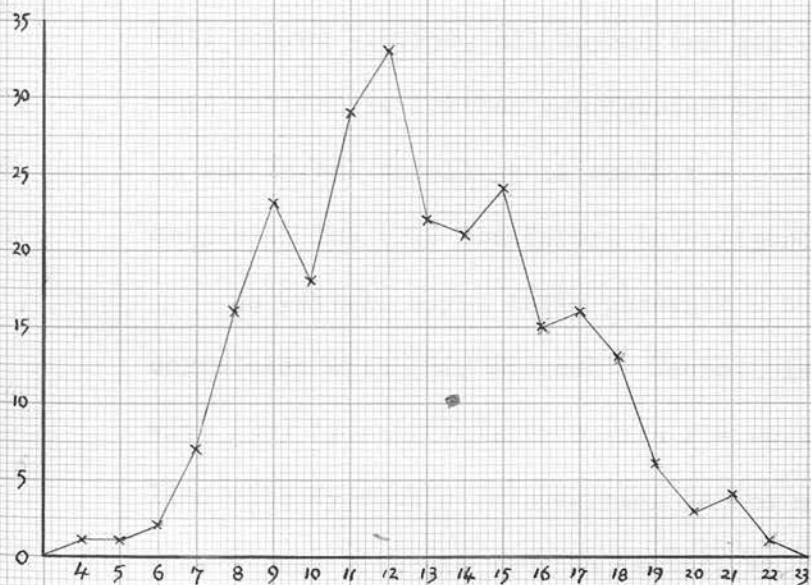
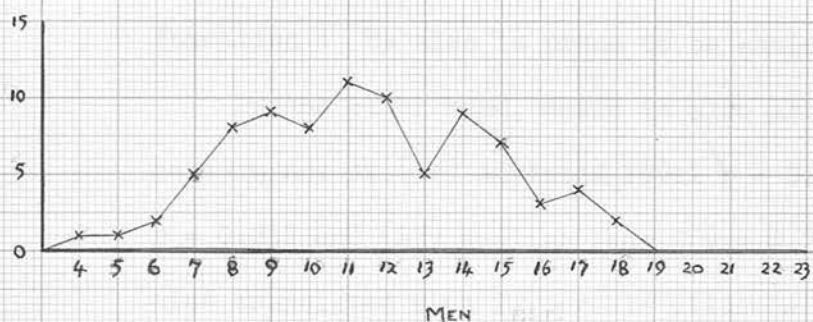
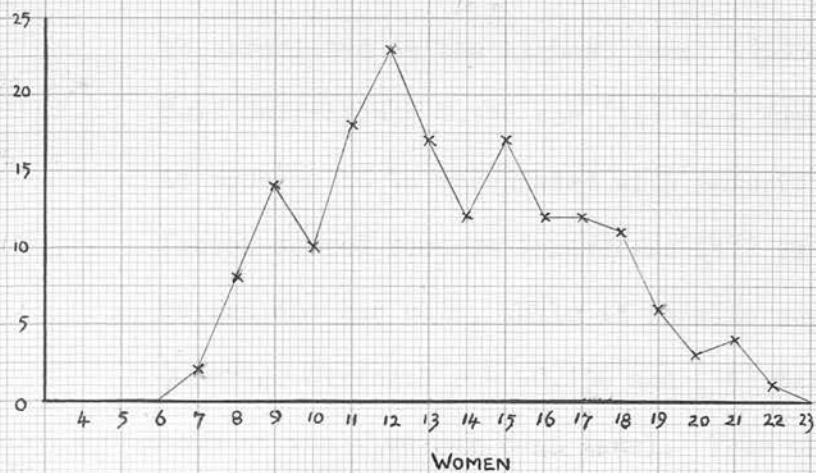
This factor's extreme poles are represented by the above contractions from Autistic, or 'internally autonomous' thinking' and 'practical concern with outer awkward details.' While this does not exactly conform to the popular concept of introversion-extraversion it is actually the most heavily loaded element in Cattell's Second Order factor of this name. As such this predictor variable may be considered as testing the dual hypothesis that introverts perform better in theory examinations, but extraverts perform better in practical teaching situations, as well as making a contribution to the testing of the general hypothesis concerning the relation between personality and performance.

Thirteen questions measure their factor which scored 0, 1, 2 give a range of 0 - 26 which are measured by the following questions with the highest weighted response indicated:

Question No. 14: (c)	Question No. 115: (a)
,, ,, 15: (c)	,, ,, 116: (a)
,, ,, 39: (a)	,, ,, 140: (a)
,, ,, 40: (a)	,, ,, 141: (c)
,, ,, 65: (a)	,, ,, 165: (c)
,, ,, 90: (c)	,, ,, 166: (c)
,, ,, 91: (a)	

In this investigation the sample mean was 12.81 with the women's mean of 13.51 significantly higher (at the 1% level) towards introversion than the men's mean of 11.41. These results are within the range reported from other sources tending to be higher than American norms but somewhat lower than those from U.K. sources.

A total twenty-one coefficients correlate negatively with the criterion beyond five per cent, fourteen beyond one per cent, while eighteen correlate positively, twelve at the latter level.



$$\bar{x} = 12.81 \quad \sigma = 3.49$$

As one might expect, the highest coefficient was with the second order introversion factor $r = 0.325$ while high Autia appears also to be associated at the highest level (1%) with (8) Premia $r = 0.290$, (14) Self Sufficiency 0.196 and (16) High Ergic Tension $r = 0.178$. So too it appears to be associated with naiveté for the correlation with this factor scored towards Shrewdness (11) is -0.221 , which is significant beyond one per cent, while it is also negatively correlated with (6) Superego Strength $r = -0.158$ and (15) Self Sentiment Formation $r = -0.143$, both at the five per cent level. Thus the high M person also tends towards casual, undependability, as well as having poor Self Sentiment Formation : He also is prone to be anxious (18: $r = 0.149$, sig at 5%)

On the other hand, Autia is also associated with Academic performance at (34) Advanced level $r = 0.179$ (20) English Year 1 $r = 0.232$ and (87) English Year 2 $r = 0.273$. (all sig. at 1%). This is also associated with favourable attitude to teaching as measured on the three aspects of the Minnisota Teacher Attitude Inventory : (28) M.T.A.I. Final Scores $r = 0.244$ (26) M.T.A.I. Pro Scores 0.233 and (27) M.T.A.I. Anti Scores -0.250 , all beyond one per cent. The linguistic element in this pattern is further represented by the (24) Cattell Vocabulary Items on the Verbal Intelligence scale $r = .140$ (sig. at 5%) which the relationship with the (21) Non Verbal Intelligences Test is inverse $r = -0.200$.

As Cattell says, Autia presents a subtle pattern in that it correlates with (38) Eysenck's Neuroticism $r = 0.194$ (sig. at 1%) and with (39) Eysenck's Extraversion $r = -0.122$ (sig. at 5%). Thus it is in line with Eysenck's Introversion as one might expect, but also relates more highly with his tension factor. At the same time this does not appear to represent immaturity for both Pitts' Emotional Maturity Scale coefficients are significantly correlated with Autia at five per cent

(52) $\frac{M}{M+1} r = 0.136$ (53) $(M - 1) r = 0.133$. Yet there is a clear association between the measure and the estimates of one's own and others' difficulties prior and subsequent to the second teaching practice: thus (84) Estimate of one's own difficulties after the 2nd practice $r = 0.232$ and (83) Estimate of other's difficulties after the 2nd practice $r = 0.196$ both significant at one per cent, while the (59) Estimate of others' difficulties prior to this practice ($r = 0.152$) and (60) Estimate of one's own difficulties at this time ($r = 0.122$) are both significant at five per cent.

The estimates of teaching performance are inclined to be inversely related to the measure of Autia albeit at the five per cent level: the (85) Estimate of performance subsequent to the 2nd Teaching practice correlates $r = 0.146$ while the (86) estimate of the Final Grade made at this time i.e. as a level of aspiration is $r = -0.137$. This corresponds well with Cattell's assertion that praxemia individuals display good, sound, practical judgement. Such individuals also appear to display themselves to better advantage than high autia ones, at least as far as the interview situation is concerned for the correlation of (35) the Interview with Autia is $r = -0.171$ (sig. at 1%).

Only one of the remaining thirteen coefficients is unexpected and probably this is a freak result since it is inconsistent with the others. All these result from correlations with the measures yielded by the Social Structure Questionnaire and are, with the one exception mentioned, inversely related to Factor M. It is not intended to list all the coefficients which range down from -0.314 to 00.126 for (69) The Number of Females Known very well. Apart from this last measure only two others are significant at the lower of the two levels. No pattern emerged from the degree of acquaintance and the status of the subject for the correlations with choices made and received are intermingled throughout. It is almost certain that a sex difference exists, for choices relating to females alone do not feature in the

pattern except in the positive coefficient indicated, and it will be remembered that there was a highly significant difference between the sexes on Factor M.

There is thus some support for the general hypothesis as far as this predictor variable is concerned, but although there is a suggestion that introversion as measured by this factor is related to successful academic performance, in that all except one of the coefficients produced are positive, only two reach the level of significance.

By the same token the coefficients with Practical teaching are negative but fail to reach the level of significance, so that although there is some support for the dual hypothesis regarding the performance of introverts and extraverts, it cannot be said to be completely proven by the results of this predictor variable.

Variable 11 Shrewdness - Naivete

Factor N is said to represent some form of intellectual-educational development which, while distinct from intelligence, correlates with it and also with dominance. Moreover Hadley (1953) is quoted as finding high N scores negatively correlated with teaching success. Here it tests the general proposition.

Ten questions with responses score 0, 1 and 2 give a range of 0 - 20 from the following with the heaviest weighted responses indicated:

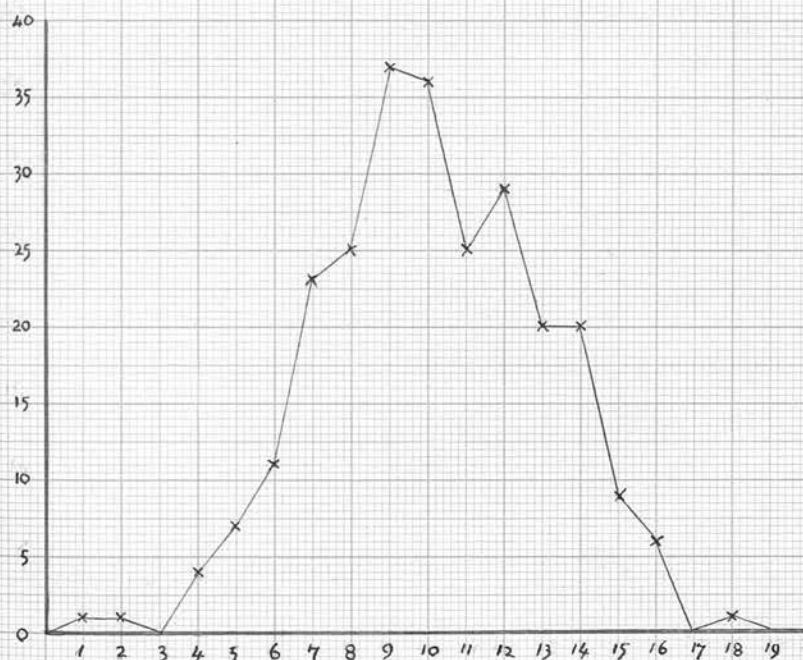
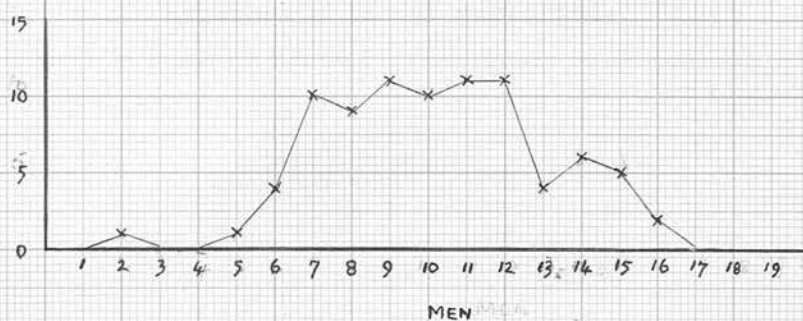
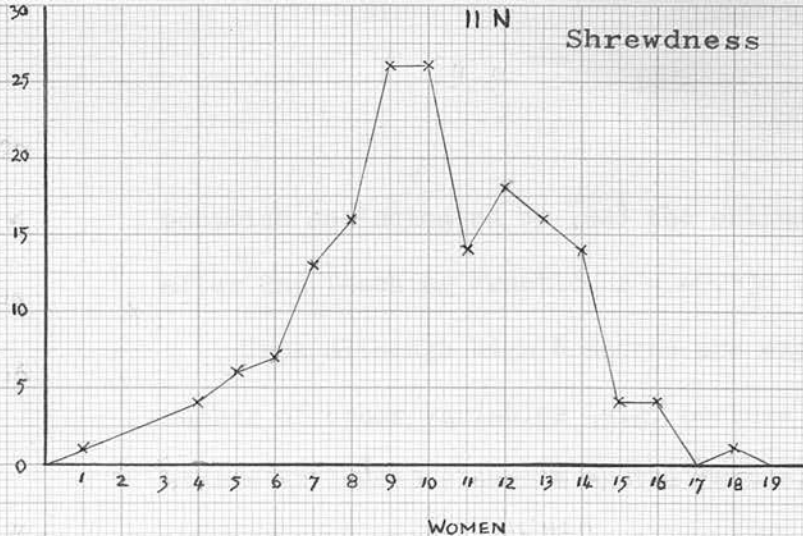
Question No. 16 : (c)	Question No. 67: (c)
,, , 17 : (a)	,, , 92: (c)
,, , 41 : (c)	,, , 117: (a)
,, , 42 : (a)	,, , 142: (a)
,, , 66 : (c)	,, , 167: (a)

The mean raw score on this factor for the whole sample was 10.14 with no significance (at 5%) between the men's mean of 10.21 and the female's one of 10.11.

Only eight coefficients were produced with this measure, four positive. None were from measures of performance so that Hadley's finding could not be supported any more than Cattell's expectation regarding intelligence and dominance. Mention has already been made of (10) Autia $r = -0.221$ (3). Emotional Stability $r = 0.177$ and (6) Superego Strength $r = 0.226$ all significant at one per cent in their correlation with Shrewdness.

Only one other coefficient correlates at this level (15) Q3 Self Sentiment Formation $r = 0.234$ and this is the highest one correlating with Factor N. One other factor from the 16 P.F. correlates at the 5% level, (8) Premsia, with $r = -0.120$.

The remaining positive coefficient is with (85) the Estimate of the Teaching Grade after the 2nd Practice $r = 0.131$ indicating that there is a tendency for the most Shrewd to have the highest level of Aspiration. They also appear to rate their own difficulties as low on



$$\bar{x} = 10.14 \quad \sigma = 2.89$$

occasion as indicated by (84) the estimate of one's own difficulties after 2nd Teaching Practice $r = -0.138$ (sig. at 5%)

Thus although high N scores are expected to correlate with a number of other variables (e.g. because of insight regarding self and others as loaded elements on the factor), the coefficients do not reach the level of statistical significance, so that the initial hypothesis is not supported.

Responses to the range of 0 - 25 as follows:

Question No. 101 (a)	Question No. 102 (a)
101 101 (a)	102 101 (a)
101 102 (a)	102 102 (a)
101 103 (a)	102 103 (a)
101 104 (a)	102 104 (a)
101 105 (a)	102 105 (a)
101 106 (a)	102 106 (a)
101 107 (a)	102 107 (a)
101 108 (a)	102 108 (a)
101 109 (a)	102 109 (a)
101 110 (a)	102 110 (a)
101 111 (a)	102 111 (a)
101 112 (a)	102 112 (a)
101 113 (a)	102 113 (a)
101 114 (a)	102 114 (a)
101 115 (a)	102 115 (a)
101 116 (a)	102 116 (a)
101 117 (a)	102 117 (a)
101 118 (a)	102 118 (a)
101 119 (a)	102 119 (a)
101 120 (a)	102 120 (a)
101 121 (a)	102 121 (a)
101 122 (a)	102 122 (a)
101 123 (a)	102 123 (a)
101 124 (a)	102 124 (a)
101 125 (a)	102 125 (a)
101 126 (a)	102 126 (a)
101 127 (a)	102 127 (a)
101 128 (a)	102 128 (a)
101 129 (a)	102 129 (a)
101 130 (a)	102 130 (a)
101 131 (a)	102 131 (a)
101 132 (a)	102 132 (a)
101 133 (a)	102 133 (a)
101 134 (a)	102 134 (a)
101 135 (a)	102 135 (a)
101 136 (a)	102 136 (a)
101 137 (a)	102 137 (a)
101 138 (a)	102 138 (a)
101 139 (a)	102 139 (a)
101 140 (a)	102 140 (a)
101 141 (a)	102 141 (a)
101 142 (a)	102 142 (a)
101 143 (a)	102 143 (a)
101 144 (a)	102 144 (a)
101 145 (a)	102 145 (a)
101 146 (a)	102 146 (a)
101 147 (a)	102 147 (a)
101 148 (a)	102 148 (a)
101 149 (a)	102 149 (a)
101 150 (a)	102 150 (a)
101 151 (a)	102 151 (a)
101 152 (a)	102 152 (a)
101 153 (a)	102 153 (a)
101 154 (a)	102 154 (a)
101 155 (a)	102 155 (a)
101 156 (a)	102 156 (a)
101 157 (a)	102 157 (a)
101 158 (a)	102 158 (a)
101 159 (a)	102 159 (a)
101 160 (a)	102 160 (a)
101 161 (a)	102 161 (a)
101 162 (a)	102 162 (a)
101 163 (a)	102 163 (a)
101 164 (a)	102 164 (a)
101 165 (a)	102 165 (a)
101 166 (a)	102 166 (a)
101 167 (a)	102 167 (a)
101 168 (a)	102 168 (a)
101 169 (a)	102 169 (a)
101 170 (a)	102 170 (a)
101 171 (a)	102 171 (a)
101 172 (a)	102 172 (a)
101 173 (a)	102 173 (a)
101 174 (a)	102 174 (a)
101 175 (a)	102 175 (a)
101 176 (a)	102 176 (a)
101 177 (a)	102 177 (a)
101 178 (a)	102 178 (a)
101 179 (a)	102 179 (a)
101 180 (a)	102 180 (a)
101 181 (a)	102 181 (a)
101 182 (a)	102 182 (a)
101 183 (a)	102 183 (a)
101 184 (a)	102 184 (a)
101 185 (a)	102 185 (a)
101 186 (a)	102 186 (a)
101 187 (a)	102 187 (a)
101 188 (a)	102 188 (a)
101 189 (a)	102 189 (a)
101 190 (a)	102 190 (a)
101 191 (a)	102 191 (a)
101 192 (a)	102 192 (a)
101 193 (a)	102 193 (a)
101 194 (a)	102 194 (a)
101 195 (a)	102 195 (a)
101 196 (a)	102 196 (a)
101 197 (a)	102 197 (a)
101 198 (a)	102 198 (a)
101 199 (a)	102 199 (a)
101 200 (a)	102 200 (a)

In the present investigation the sample mean was 12.25 with that of the 100 - 10.25, which is significantly lower (at the 5% level) than that of the 100 - 10.25. These results are similar to those obtained from American sources while the mean's performance is higher than most results from these sources but each group results are higher than for U.S. sources as noted by Stark.

As previously indicated, factor 1 is significantly correlated with the following factors on the 100 - 10.25:

(1) Nationality	$r = -0.181$	sig. at 5%
(2) Female	$r = 0.151$	sig. at 5%
(3) Age	$r = 0.134$	sig. at 5%
(4) Male	$r = -0.134$	sig. at 5%

Factor 2 (100 - 10.25) High Anglo Factor produced the highest correlation $r = 0.460$ and (100 - 10.25) Half-Sentiment Factor was also correlated beyond one per cent ($r = 0.131$) while (100 - 10.25) Factor 3 produced $r = -0.173$ significant beyond five per cent. Since factor 4 has a double weight in the 100 - 10.25 composite (100 - 10.25) Factor 4 is not surprising to find a correlation of 0.550 with the 100 - 10.25

Variable 12. Guilt Proneness - Confident Adequacy

This factor is regarded by Cattell as one of the most important elements in Personality, featuring particularly prominently in the depressive-anxiety syndrome. It is used to test the hypotheses relating to anxiety/neuroticism as well as the general assertion regarding personality and performance. As such, some prominence is given to it by having thirteen questions with the usual scoring of responses giving a range of 0 - 26 as follows:

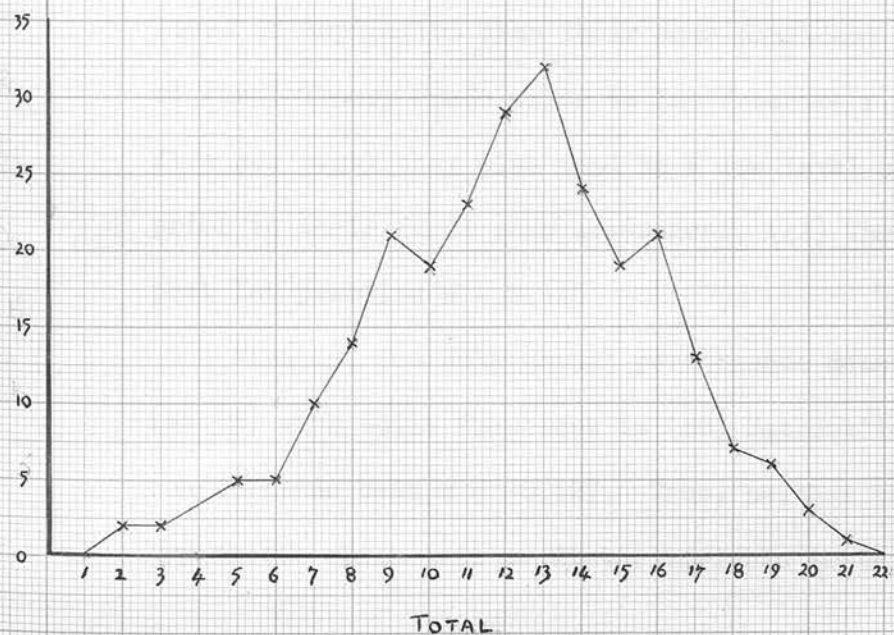
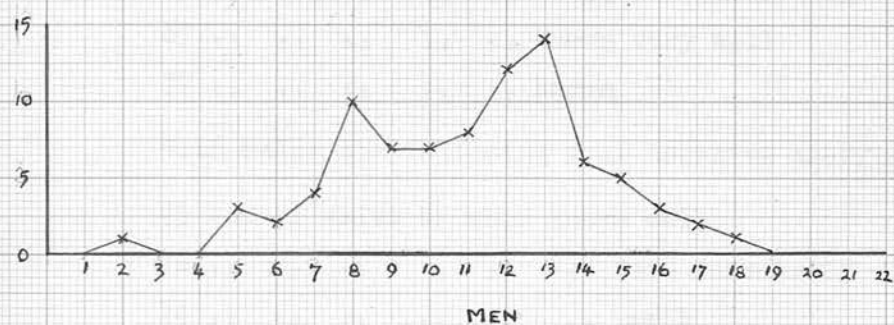
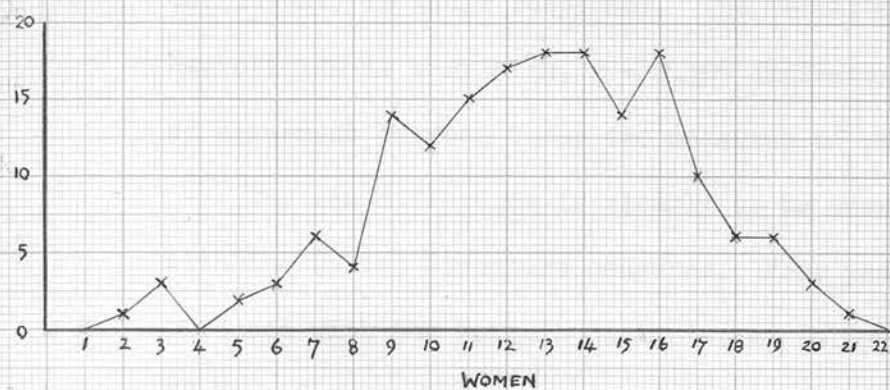
Question No. 18: (a)	Question No. 94: (a)
,, , 19: (c)	,, , 118: (a)
,, , 43: (a)	,, , 119: (a)
,, , 44: (c)	,, , 143: (a)
,, , 68: (c)	,, , 144: (c)
,, , 69: (a)	,, , 168: (c)
,, , 93: (c)	

In the present investigation the sample mean was 12.25 with that of the men at 11.09, which is significantly lower (at 1%) than that of the women with 12.84. These results are higher for women than those obtained from American sources while the men's performance is higher than most results from these sources but both groups results are below those for U.K. sources as quoted by Start.

As previously indicated, factor 0 is significantly correlated with the following factors on the 16 P.F:

(3) Emotional Maturity	$r = -0.461$	sig. at 1%
(8) Premsia	$r = 0.251$,, , ,
(9) Protension	$r = 0.234$,, , ,
(7) Parmia	$r = -0.124$,, , , 5%

In addition (16) High Ergic Tension produced the highest correlation $r = 0.460$ and (15) Self Sentiment Formation was also correlated beyond one per cent ($r = -0.235$) while (13) Radicalism produced $r = -0.153$ significant beyond five per cent. Since factor 0 has a double weight in the Second Order composite (18) Anxiety Factor, it is not surprising to find a correlation of 0.530 between the two.



$$\bar{x} = 12.25 \quad \sigma = 3.60$$

Cattell indicates that a high factor 0 score may have certain advantages from a social standpoint. This is interesting in that the correlation with (40) Eysenck's Lie Score is negative -0.179 sig. at 1% suggesting that those 'poor in spirit' tend to be honest (or consistent) in their responses. The correlation with (38) Eysenck's Neuroticism is very high, $r = 0.409$ indicating a substantial measure of agreement between these two measures of personality.

The sex difference is clearly to be seen in ^{the} pattern of coefficients with the Social Structure measures. Four positive coefficients are produced with the women's measures, as follows:

78 No. of women by whom known well	$r = 0.249$ sig. at 1%
79 ,, ,, ,, ,, ,, ,, and known well	$r = 0.178$,, ,, ,,
69 ,, ,, ,, ,, ,, known very well	$r = 0.160$,, ,, 5%
77 ,, ,, ,, ,, ,, known	$r = 0.121$,, ,, ,,

With males the following four negative coefficients were formed:

75 No. of males by whom known well	$r = -0.205$ sig. at 1%
76 ,, ,, ,, ,, ,, ,, and known well	$r = -0.172$,, ,, ,,
74 ,, ,, ,, ,, ,, ,, well	$r = -0.149$,, ,, 5%
65 ,, ,, ,, ,, ,, known	$r = -0.142$,, ,, ,,

During the first year Guilt prone individuals tend to have a lower level of Aspiration than their more confident colleagues, (41) Estimate of Final Theory Grade prior to 1st Practice $r = -0.150$, significant at five per cent: they also tend to a low level of Aspiration immediately prior to their first year assessment, (44) Theory Estimate for Year I post 1st practice $r = -0.145$

Finally, the only actual performance measure significantly correlated (at 5%) with Guilt Proneness is (88) Mathematics Year 2 where the more confident do best $r = -0.127$. Thus, neither the general nor the specific hypotheses which this predictor variable tests are supported.

Variable 13. Radicalism-Conservatism

This, the first of the four questionnaire factors not validated by behaviour ratings, is said by Cattell to measure a general, "temperamental" dimension of personality than a "mere set of acquired radical political and religious attitudes". As such it tests the initial hypothesis.

In the 16 P.F. the following ten questions with the 0, 1, 2 scoring yield a range of scores 0 - 20:

Question No. 20: (a)	Question No. 95: (c)
,, ,, 21: (c)	,, ,, 120: (c)
,, ,, 45: (c)	,, ,, 145: (a)
,, ,, 46: (a)	,, ,, 169: (a)
,, ,, 70: (a)	,, ,, 170: (c)

The mean sample score was 9.57 with the men's mean of 10.26 significantly higher at the one per cent level than the women's one of 9.23. These are as high as the highest U.K. norms and higher than most American ones.

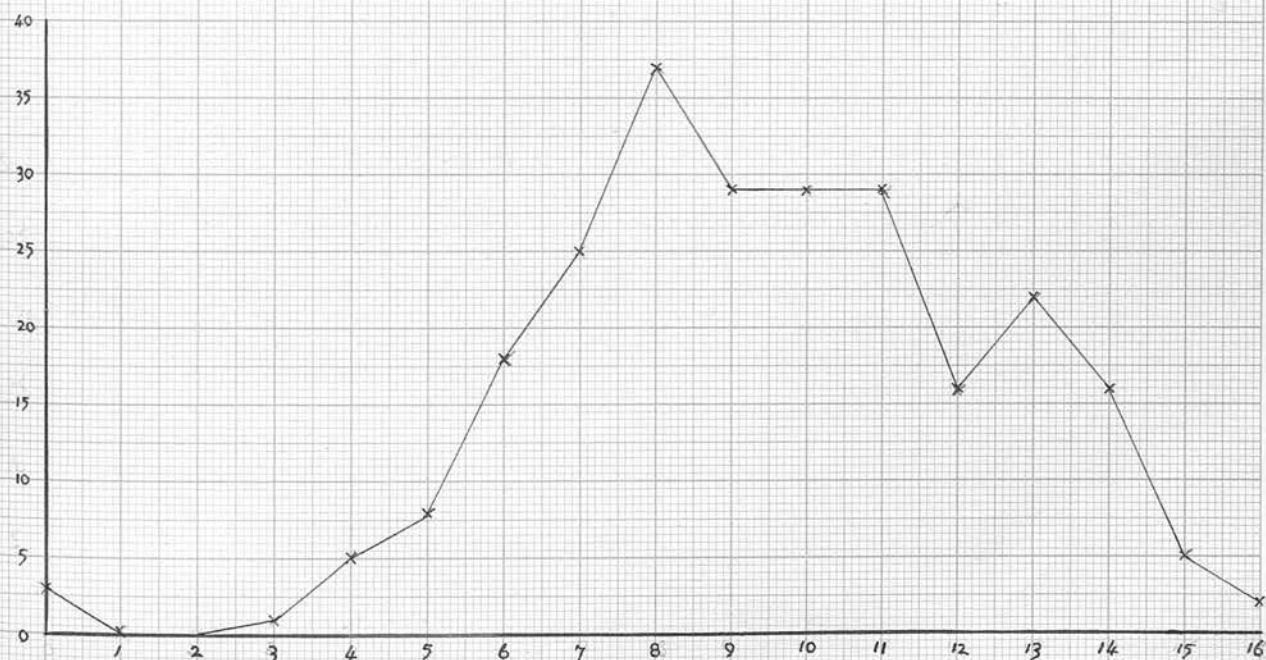
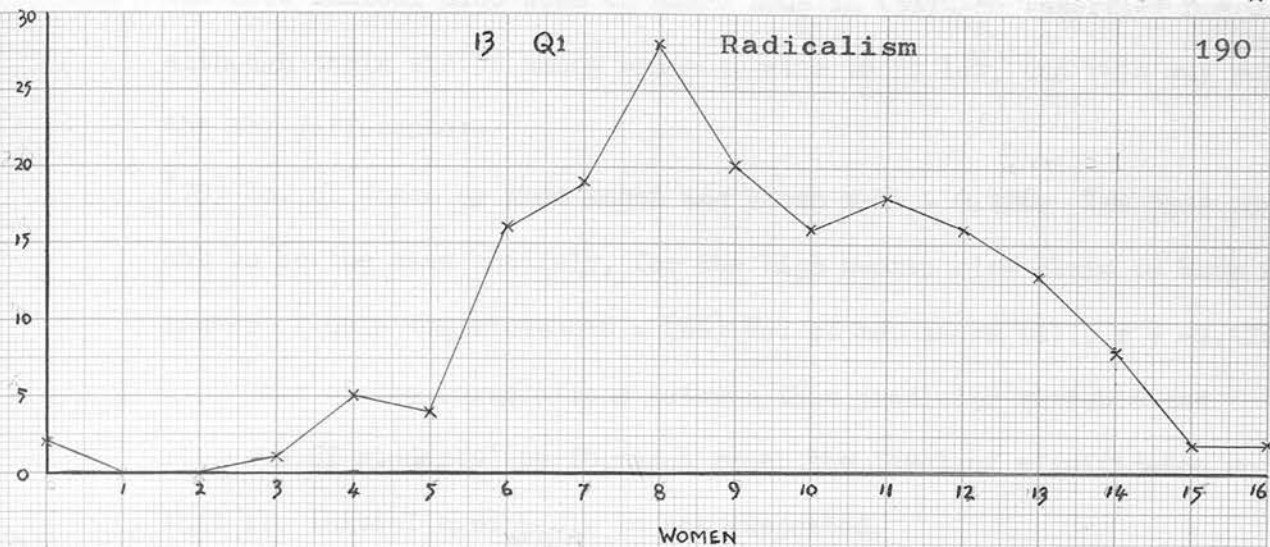
None of the ten significant coefficients produced are significant at one per cent level and only two of the 16 P.F.'s other factors are correlated at five per cent, (12) Guilt Proneness, $r = -0.152$ and (9) Protension, $r = 0.125$. Thus the most radical are generally confident but prone to be suspicious. Radicalism is also apparently least common in the make-up of Welsh-speaking students, viz. (58) Language $r = -0.124$.

With regard to the comments made about Radicalism being more than a collection of attitudes, it is interesting to note that the factor correlates with (27) The Minnesota Teacher Attitude Inventory 'Anti' or 'Wrong' scores $r = -0.153$, the highest correlation with factor 0 and (28) The M.T.A.I. Final scores $r = 0.132$. This substantiates the view that the Minnesota Inventory identifies the 'good' teacher as one with progressive rather than conservative practices. So too, by the end of the first year, those who place pupils as being more important to them

13 Q1

Radicalism

190



Total

$$\bar{x} = 9.57 \quad \sigma = 2.91$$

than the techniques of teaching and the subject matter are generally radical (54) Pupil/Techniques/ Subject importance (Summer.) $r = 0.145$. The more radical also seen to score best in (35) The Interview $r = 0.127$, although their status among women appears to be low, and this may reflect the sex difference:-

(79) No. of Women by whom known and known well - 0.126. Yet this appears not to be the case entirely, for the high scores also claim to have small number of male acquaintances - (66) No. of men known well, $r = -0.124$.

None of the correlations between this predictor variable and measures of students' performance reach the level of significance so that the initial hypothesis is not supported.

(1) Pupil/Techniques/ Subject importance (Summer.)	-0.315	sig. at 1%
(2) Pupil/Techniques/ Subject importance (Winter.)	-0.281	sig. at 1%
(3) Pupil/Techniques/ Subject importance (Summer.)	-0.285	sig. at 1%
(4) Pupil/Techniques/ Subject importance (Winter.)	0.196	sig. at 1%
(5) Pupil/Techniques/ Subject importance (Summer.)	-0.123	sig. at 1%

Group dependency is very closely associated with the status of the individual in terms of the number of choices available to him as well as by the number of others who are known to him. In all systems

Variable 14. Self-Sufficiency - Group-Dependency

This Q2 factor is a major element in introversion and as such tests the hypothesis relating to introversion-extraversion as well as the general hypothesis. It is measured on a 0 - 20 scale by the following questions, thus :

Question No. 22: (c)	Question No. 97: (c)
,, , 47: (a)	,, , 121: (c)
,, , 71: (a)	,, , 122: (c)
,, , 72: (a)	,, , 146: (a)
,, , 96: (c)	,, , 171: (a)

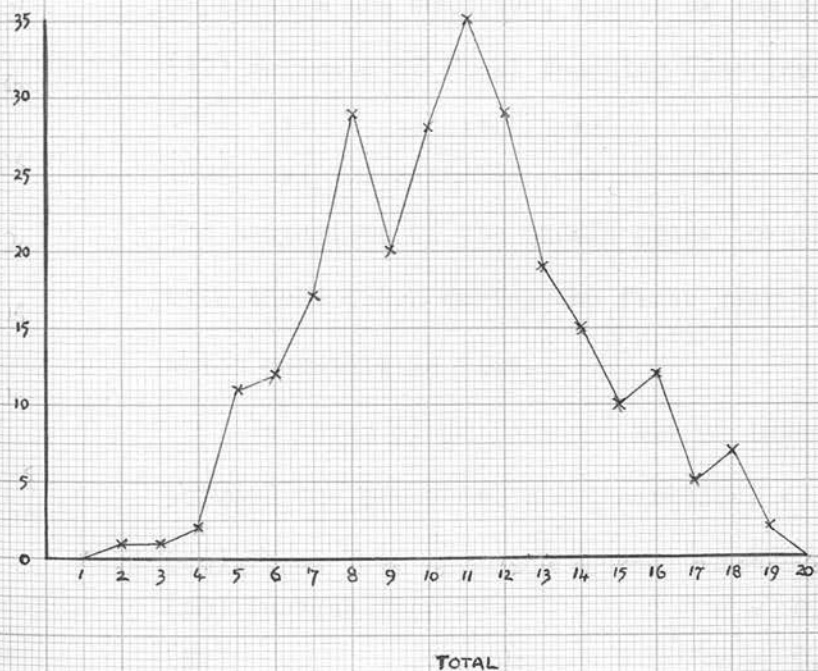
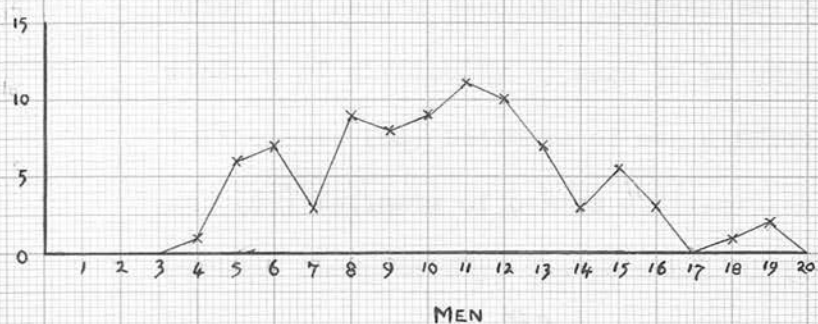
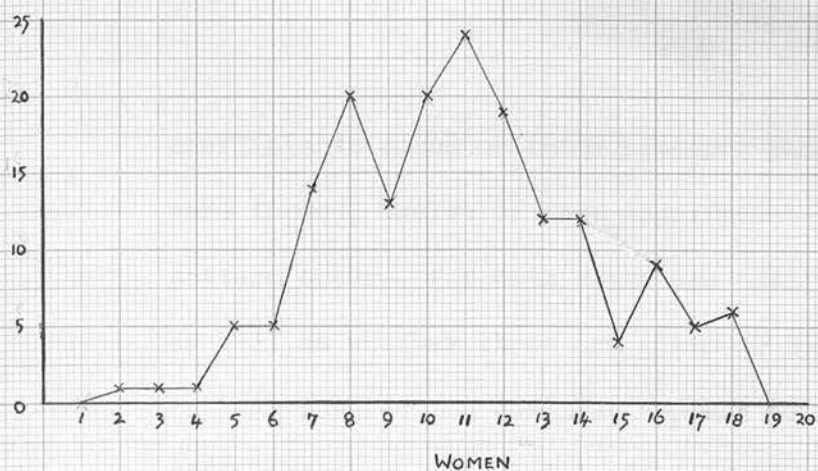
The sample mean was 10.71 with a men's mean of 10.47 not significantly lower at 5% than the women's one of 10.84. The results are closer to the standardization Table and U.K. norms **but** rather higher than those for the U.S.A. as given in the Handbook. In all, thirty-five coefficients correlate with the criterion factor beyond five per cent^{twenty-three} of them beyond one per cent.

Because of its utilization as an element in the composition of the second order factor, it is not surprising to find that the highest correlation is between Q2 and (17) Second Order Introversion, $r = 0.550$. The second highest correlation, as it were, confirms the relationship when allowance is made for the different direction of scoring for it is with (39) Eysenck's Extraversion $r = -0.322$.

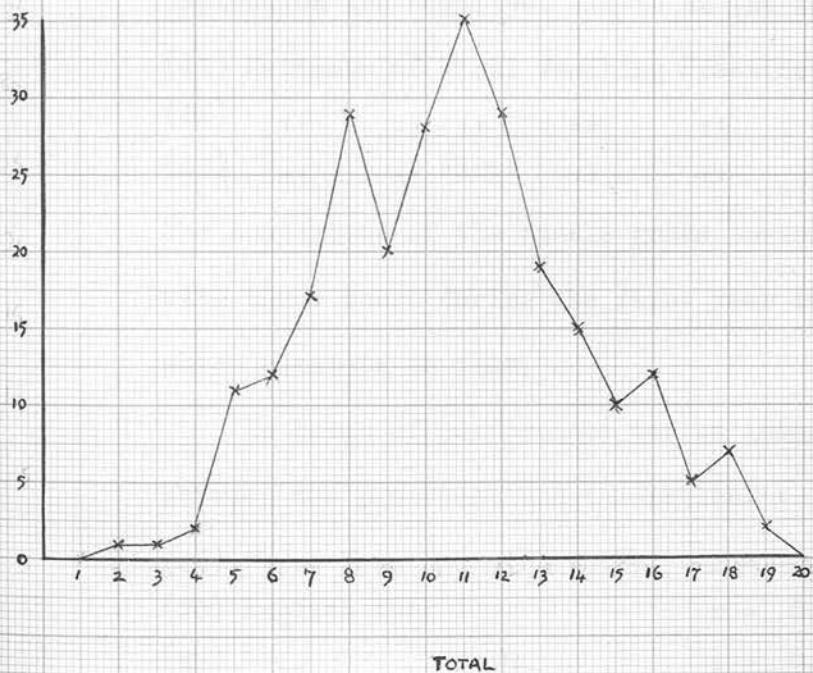
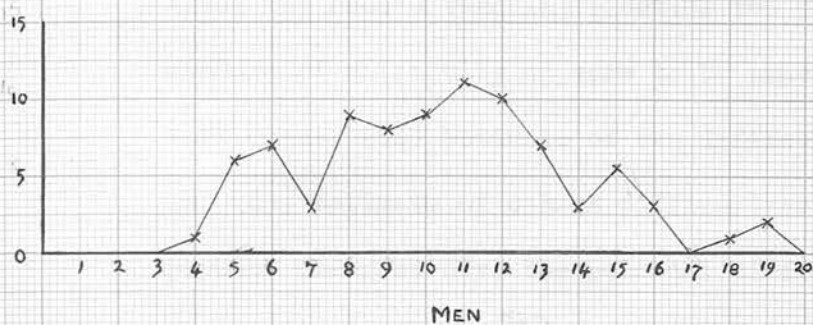
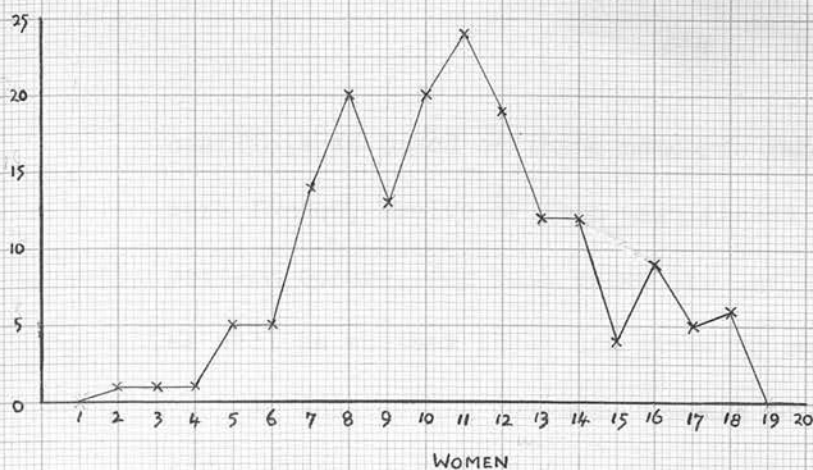
The relationship between Self-Sufficiency and the other 16 P.F. factors has been discussed and may be summarized for convenience :-

(5) Surgency	-0.318	Sig. at 1%
(1) Cyclothymia	-0.241	,, , ,
(7) Parmia	-0.225	,, , ,
(10) Antia	0.196	,, , ,
(4) Dominance	-0.123	,, , 5%

Group Dependency is very closely associated with the status of the individual in terms of the number of choices received, as well as by the number of others claimed to be known, for in all sixteen



$$\bar{x} = 10.71 \quad \sigma = 3.38$$



$$\bar{x} = 10.71 \quad \sigma = 3.38$$

coefficients based on these measures ranging from - 0.282 down to -0.138, were formed, twelve of them significant beyond one per cent. No clear pattern occurs, for both sexes are involved, and the degree of choice as well as whether these are given or received are intermingled.

An interesting contrast appears to exist between the estimates of difficulties and the level of aspiration of the more self sufficient. After the second teaching practice two correlations indicate that a fair measure of difficulty appears to be experienced by the more Self-sufficient, (84) Estimate of own difficulties, $r = 0.165$ (sig. at 1%) and (83) Estimate of others difficulties, $r = 0.151$ (sig. at 5%). Thus, perhaps unexpectedly, the personal difficulties are rated higher than the ascribed ones by the more self-sufficient). But the main point being made is that the correlations with three measures of level of aspiration are negative, albeit at the five per cent level:

(42)	Estimate of Final Teaching Practice	Pre 1st Practice	$r = -0.138$
(86)	,, ,, ,, ,, ,, ,,	Final ,,	$r = -0.133$
(43)	,, ,, First ,, ,, ,,	1st ,,	$r = -0.128$

The comparison of the middle grade towards the end of the third year with those taken during the first year indicates that this is a trend which persists in time.

In terms of performance too an interesting dichotomy is produced between the practical and theoretical :

(46)	First Year Teaching Grade	$r = -0.137$ sig. at 5%
(20)	English Year I	$r = 0.297$
(87)	,, ,, 2	$r = 0.204$

So it appears that the group dependent have the advantage in their first year practical teaching, but that Self-Sufficiency is a desirable feature for success in English examinations. (Conversely it may be that those with a flair of English choose to represent themselves as independent.)

As one might reasonably expect, the more self sufficient appear more mature, but only on one instrument (52) Pitts E.M. Scale $r = 0.162$ (sig. at 1%), while they also tend to be older than the more group dependent, (55) Age in months, $r = 0.149$ (sig. at 5%).

Finally, the myth about the gregarious, not to say 'clannish', quality of the Welsh appears to have a modicum of support for the correlation with (58) Language, scored towards Welsh, is negative, $r = -0.137$ (sig. at 5%).

There is some slight support for the specific hypothesis relating to introversion-extraversion from the results of the first two years, but the general hypothesis, based as it is on the final results cannot be said to be supported by the evidence from this predictor variable.

Summarising the information previously derived from the 16 F.F.

the following may be stated:-

(4) Dominance	$r = -0.106$	sig. at 1%
(8) Super ego formation	$r = 0.131$	" " "
(11) Ego strength	$r = -0.112$	" " "
(12) Emotional stability	$r = 0.249$	" " "
(13) Self preservation	$r = -0.235$	" " "
(14) Powerfulness	$r = 0.134$	" " "
(15) Warmth	$r = -0.100$	" " "
(16) Action	$r = -0.112$	" " "
(17) Eureka	$r = 0.142$	" " "

In addition, those with high Self-Security formation appear to be phlegmatic or unphlegmatic, rather than tense and excitable.

(18) Social Function $r = -0.330$ (sig at 1%)

The loading on the second order factor is predictable and of the same order of significance, (16) Second Order Anxiety $r = -0.451$. This correlates very well with (19) Eysenck's Neuroticism $r = -0.271$. What is distinctly odd is the positive correlation between (1) and (10) Eysenck's Lie Scale $r = 0.230$ sig. at 1%, which may represent the failure of the subject to project an artificially created one of socially desirable

Variable 15. High-Low Self Sentiment Formation

This factor is regarded by Cattell as a stabilizing element in personality or as Stice called it, the gyroscopic factor. Ten questions giving the range 0 - 20 measure it as follows:

Question No. 23. (c)	Question No. 123. (c)
,, , 24. (c)	,, , 147. (c)
,, , 48. (a)	,, , 148. (a)
,, , 73. (a)	,, , 172. (c)
,, , 98. (a)	,, , 173. (a)

The mean score for the whole sample was 9.85 with no significance (at 5%) between the men's mean of 9.81 and the female mean of 9.87. These scores are lower than American norms, U.K. ones being a little higher than Warburton's U.K. ones.

Summarizing the information previously derived from the 16 P.F. the following may be listed :-

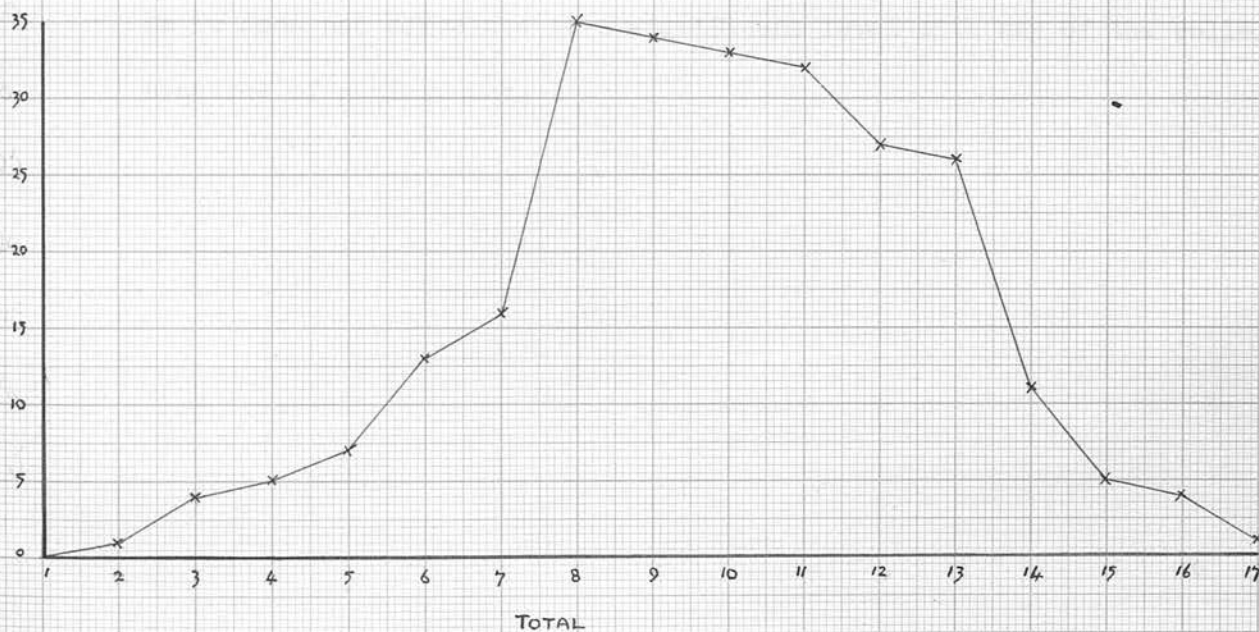
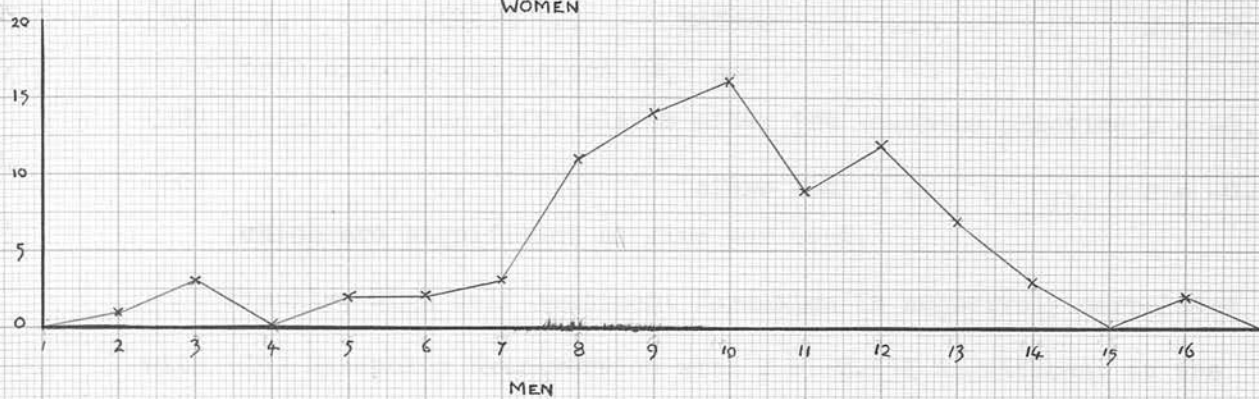
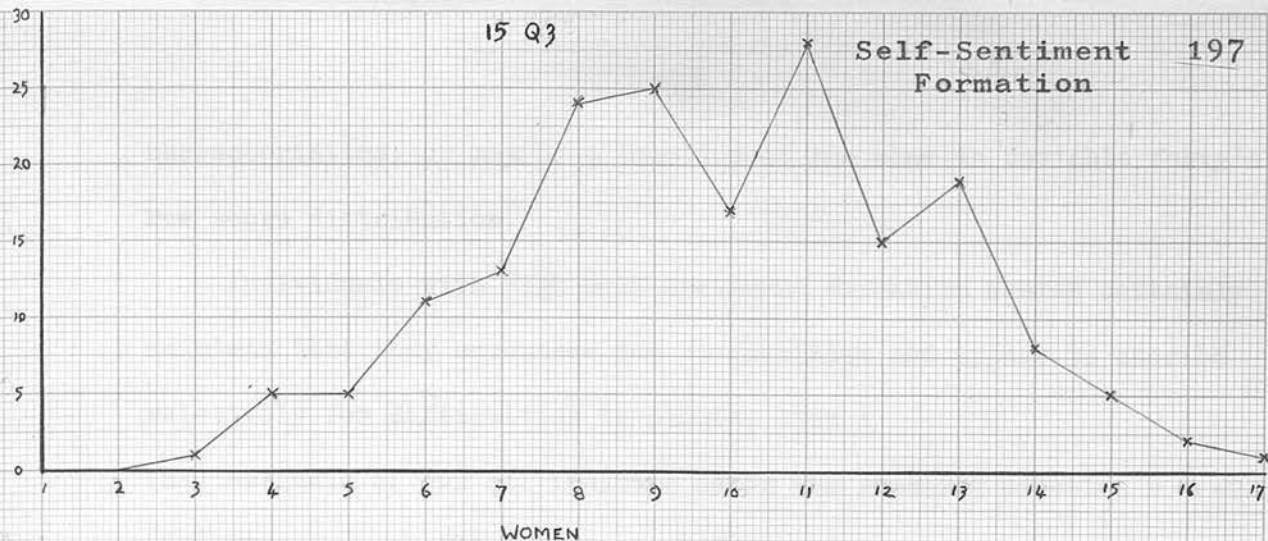
(4) Dominance	$r = -0.386$	sig. at 1%
(6) Super ego Strength	$r = 0.333$,, , ,
(9) Protension	$r = -0.312$,, , ,
(3) Emotional Stability	$r = 0.249$,, , ,
(12) Guilt Proneness	$r = -0.235$,, , ,
(11) Shrewdness	$r = -0.234$,, , ,
(5) Surgency	$r = -0.200$,, , ,
(10) Autia	$r = -0.143$,, , 5%
(7) Parmia	$r = -0.142$,, , ,

In addition, those with High Self Sentiment formation appear to be phlegmatic or composed, rather than tense and excitable :

(16) Ergic Tension $r = -0.330$ (sig at 1%)

The loading on the second order factor is predictable and of the same order of significance, (18) Second Order Anxiety $r = -0.481$. This corresponds very well with (38) Eysenck's Neuroticism $r = -0.221$. What is distinctly odd is the positive correlation between Q3 and (40) Eysenck's Lie Score $r = 0.230$ sig. at 1%, which may represent the failure of the subject to project an artificially created set of socially desirable

15 Q3

Self-Sentiment 197
Formation

$$\bar{x} = 9.85 \quad \sigma = 2.83$$

characteristics, or may be a function of the skew in variable forty's raw score distribution.

Individuals with High Self sentiment Formation scores certainly maintain that they encounter few difficulties and appear to ascribe relatively few difficulties to others, thus :

- (84) Estimate of own difficulties after 2nd teaching practice $r = -0.211$
 (59) ,, ,, others ,, before ,, ,, ,, $r = -0.201$
 both significant beyond 1%, and
 (32) Estimate of own difficulties after 1st teaching practice $r = -0.154$
 (60) ,, ,, ,, ,, before 2nd ,, ,, ,, $r = -0.139$
 which are significant at five per cent.

Finally, High Self sentiment Formation is negatively correlated with (39) Eysenck's Extraversion with $r = -0.152$ significant at the five per cent level of significance.

This predictor variable fails to support any of the basic hypotheses as it does not correlate at a significant level with any of the college measures of performance.

Variable 16. High-Low Ergic Tension

Ergic Tension is a measure of irrational worry, measured by the following thirteen questions giving a range of scores 0 - 26.

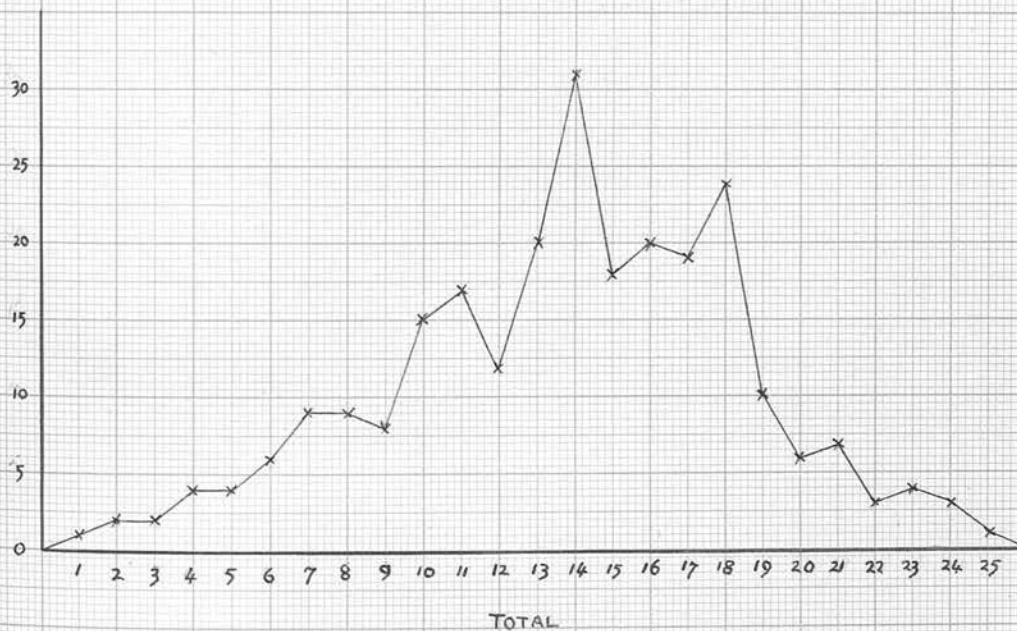
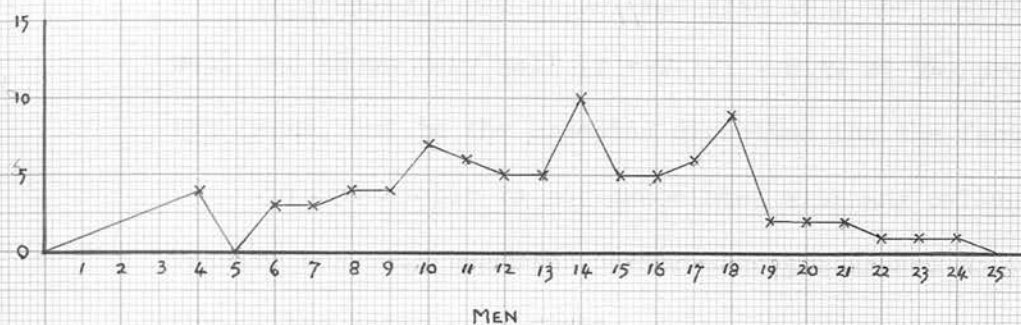
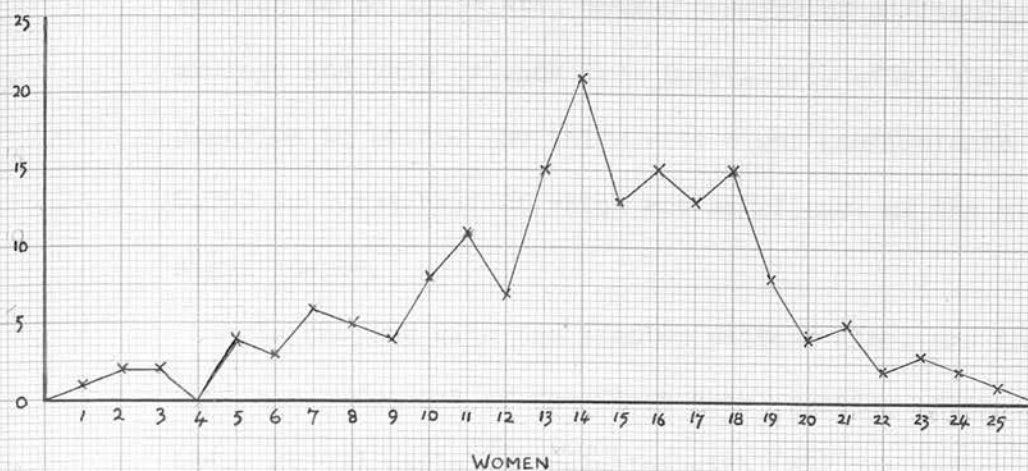
Question No. 25 : (c)	Question No. 100:(c)
,, , 49 : (a)	,, , 124:(a)
,, , 50 : (a)	,, , 125:(c)
,, , 74 : (a)	,, , 149:(a)
,, , 75 : (c)	,, , 150:(c)
,, , 99 : (a)	,, , 174:(a)
,, ,	,, , 175:(c)

These questions gave a general sample mean of 13.78 with the men's mean of 13.32 appreciably lower than the women's mean of 14.01, but the difference does not quite reach significance at the first five per cent level. These results are within the range from American sources but are somewhat lower than those from the U.K.,

To summarize the results previously considered :

(12) Guilt Proneness	$r = 0.460$	sig. at 1%
(3) Emotional Stability	$r = 0.460$	sig. at 1%
(9) Protension	$r = 0.355$	sig. at 1%
(15) High Self Sentiment	$r = 0.330$	sig. at 1%
(7) Parmia	$r = 0.238$	sig at 1%
(10) Autia	$r = 0.178$	sig. at 1%
(6) Superego strength	$r = 0.135$	sig. at 5%
(8) Premsia	$r = 0.131$	sig. at 5%

Not only is Ergic Tension represented as highly correlated with (18) the Second Order Anxiety Factor $r = -0.634$ upon which it has one of the highest loadings, but it also correlates with (17) Second Order Introversion $r = 0.136$, although this time at five per cent. This compares with the correlation with Eysenck Personality Inventory of $r = 0.454$ with (38) Neuroticism, significant beyond one per cent. The correlation with Extraversion was near zero (0.0208) while the (40) lie score produced a coefficient of $r = -0.318$, also significant beyond one per cent.



$$\bar{x} = 13.78 \quad \sigma = 4.70$$

Not surprisingly there is a general tendency for high Ergic tension to be associated with a measure of difficulty higher than average and this extends from immediately after the first teaching practice to before the third, with eight coefficients ranging from 0.260 to 0.131, half of which are significant at the higher level of significance.

In keeping with the tension pattern also, are the results from (45) the judgement of the first year practice after the event $r = -0.130$ (sig. at 5%), while the relation with (67) the number of students known well ($r = -0.125$: sig at 5%) and with (67) the number of males known well and known very well ($r = -0.121$: sig. at 5%), probably reveal a sex trend, but in the expected direction for the factor.

This predictor is not associated with any college examination results, nor with teaching performance grades and so fails to support any of the basic hypotheses.

Variable 17. Second Order Introversion:

As from 1962, Cattell stated that the best measure of introversion would be obtained by taking the raw scores on the following five factors, converting them into stens, adjusting for the direction of scoring, weighting the first three by doubling and finally totalling the score and repeating the process for each subject in the sample.

- (4) Factor A - Cyclothymia
- (5) Factor F - Surgency
- (7) Factor H+- Parmia
- (10) Factor M+- Autia
- (14) Factor Q₂- Self-sufficiency

Hence the maximum range for the introversion score ranges from 8 to 80.

In the present investigation, the total sample's mean was 45.76, with the men's mean of 46.635 insignificantly higher than that of the women at 45.300 and the whole group fractionally higher than the general population of 44.0.

As one might expect from the above formula for forming the second order factor, the five first order factors form the highest correlations:

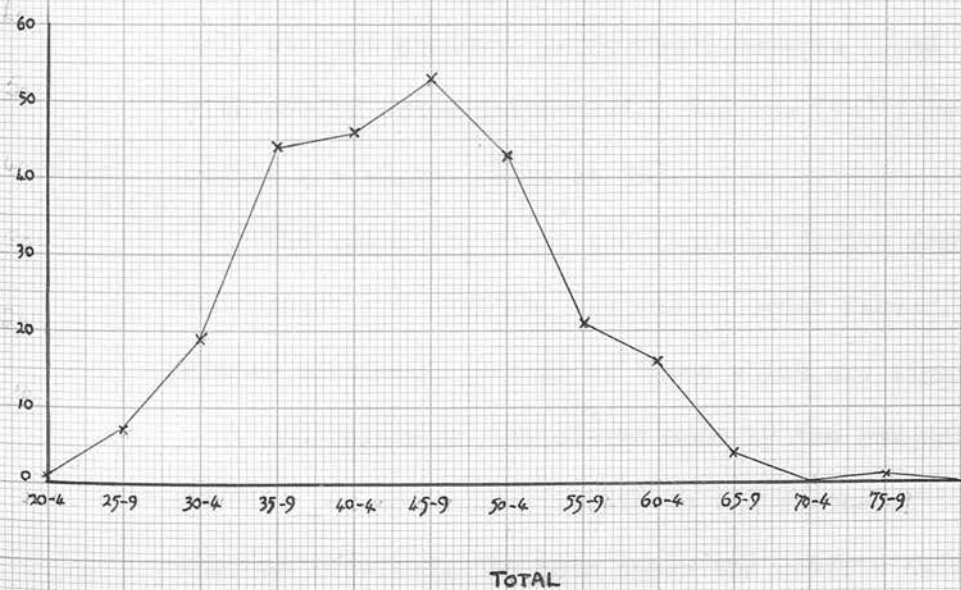
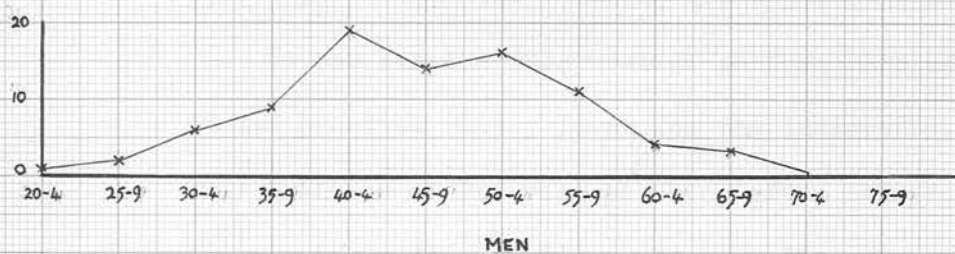
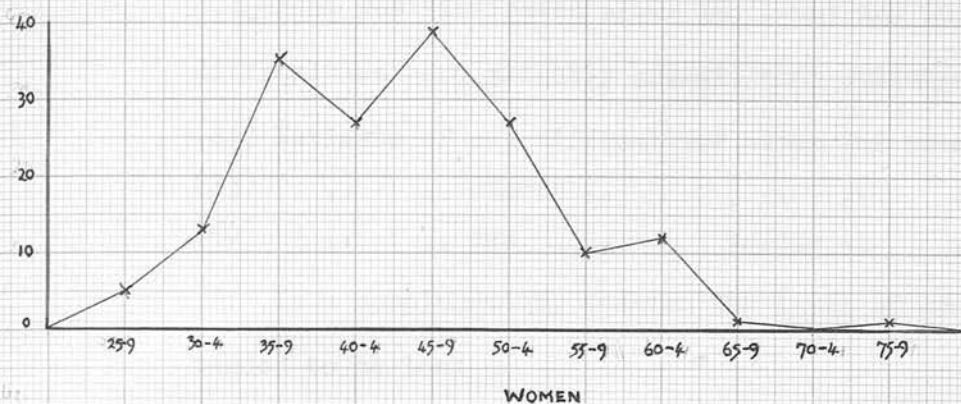
(5) Surgency	$r = -0.747$ sig at 1%
(7) Parmia	$r = -0.704$,, ,, ,,
(1) Cyclothymia	$r = -0.608$,, ,, ,,
(14)Self sufficiency	$r = 0.550$,, ,, ,,
(10)Autia	$r = 0.325$,, ,, ,,

Three other 16 P.F. factors are also correlated at a significant level :

(4) Dominance	$r = -0.306$ sig. at 1%
(16)Ergic tension	$r = -0.136$,, ,, ,,
(3) Emotional Maturity	$r = -0.144$,, ,, 5%

and the Second order Anxiety factor also correlates at the higher level of significance with the criterion, (18: $r = 0.202$ sig. at 1%)

There is also a clear link with (39) Eysenck's Extraversion $r = -0.513$ (sig. beyond 1%) and there is a slight association with (55)



$$\bar{x} = 45.75 \quad \sigma = 9.21$$

Age calculated in months $r = 0.155$ (sig. at 5%).

High introverts appear to anticipate a higher level of difficulty in their second practice and ascribe a similar level to others, and with regard to this same second teaching practice, feel that their judgement was vindicated after the event and in fact that their difficulties were slightly greater than anticipated:

- (84) Estimate of own difficulties after 2nd practice $r = 0.162$ sig. at 1%
 (83) ,, ,, others ,, ,, ,, ,, $r = 0.147$,, ,, ,,
 (60) ,, ,, own ,, before ,, ,, $r = 0.122$,, ,, ,,

In a complementary fashion the level of aspiration of introverts tended to be low:

- (42) Estimate of final grade, prior to 1st practice $r = -0.197$ sig @ 1%
 (86) ,, ,, ,, ,, after 2nd ,, $r = -0.188$,, ,, ,,
 (43) ,, ,, 1st teaching grade prior to event $r = -0.134$,, ,, 5%

So too were the judgements of performances after the first and second practice rather lower for the introverts.

- (85) Estimate of 2nd year teaching after the practice $r = -0.188$ sig. @ 1%
 (45) ,, ,, 1st ,, ,, ,, ,, ,, $r = -0.129$,, ,, 5%

As it happened there was no need for the more introverted to fear their ratings on their teaching practices for no significant correlations emerged with this variable from any of the three teaching practices. The only student academic performance measure found to correlate significantly with second order introversion was the (19) first year Education theory result $r = -0.141$ (sig. at 5%).

The remaining eight coefficients derive from the Social structure instrument and validate the second order factor. They fall into a simple clear-cut pattern of those which are significant at one per cent and relate to the claims made by the subject, and those significant at five per cent which relate to the status of the subject in terms of choices received. In both cases the coefficients are all negative.

(67) No. of students known well	$r = -0.195$
(73) No. of students known and known well	$r = -0.195$
(66) No. of women known	$r = -0.183$
(72) No. of women known and known well	$r = -0.173$
(77) No. of women by whom known	$r = -0.145$
(79) No. of women by whom known and known well	$r = -0.144$
(80) No. of students by whom known	$r = -0.137$
(82) No. of students by whom known and known well	$r = -0.133$

After the correlational analysis had been completed the index of discrimination technique was used. Variable (17) introversion, was taken as the criterion and the scores of the top and bottom 10% were identified. The mean score for the most introvert 25 was 62.56 and the most extrovert 31.60, which, when small sample technique is used because of the small number involved, is significantly different only at 5%.

The score of these fifty students was then calculated on each of the other ninety variables. As one might expect there were observed differences in the expected direction on each of the five constituent elements but not all were significant at five per cent when t-tests were applied.

The most introvert 10% on this criterion measure appear as significantly lower on (5) Surgency $t = 2.227$ (sig. at 5%), on (7) Parmia $t = 3.3113$ (sig. at 1%), and higher on (14) Self Sufficiency $t = 2.224$ (sig. at 5%) than the most extravert 10%. Not one performance measure approaches the lower level of significance and in fact, the only one which approaches the 5% level is (39) Eysenck's Extraversion ($t = 2.047$).

Thus, there is virtually no support from this predictor variable's results for either the general hypothesis, or the dual one relating to the performance of introverts and extraverts in theory and practice.

Variable 18. Second Order Anxiety

This is the major second order factor found in the 16 P.F., and is used to test the general hypotheses and those relating to the performance of those scoring high on neuroticism. It is made up of the five following prime factors, the first four of which have their sten courses weighted by doubling the raw score :-

- (3) Factor C - Emotional Stability
- (12) ,, O + Guilt Proneness
- (15) ,, Q3- High Self-Sentiment Formation
- (16) ,, Q4* High Ergic Tension
- (9) ,, L + Protension

Scored towards high anxiety the range is 9 - 90 with the mean at 49.5.

On this occasion the mean obtained for the whole group is 52.957 with no significance in the difference between the men's mean of 52.012 and that of the women with 53.429 ($t = 0.985$), but both groups are appreciably higher, towards the greater anxiety end of the continuum, than Cattell's norms.

As in the case of Introversion, the five constituent factors in the present second order factor all correlate most highly :

(16) Q4 High Ergic Tension	$r = 0.634$	Sig at 1%
(3) C- Emotional Stability	$r = 0.546$,, ,, ,,
(12) O Guilt Proneness	$r = 0.530$,, ,, ,,
(15) Q3-High Self Sentiment Formation	$r = -0.481$,, ,, ,,
(9) L Protension	$r = 0.410$,, ,, ,,

A number of the other prime factors from the 16 P.F. questionnaire also correlate significantly with the present criterion as follows :

(6) G Superego Strength	$r = -0.181$	Sig. at 1%
(7) H Parmia	$r = -0.176$,, ,, ,,
(10) M Autia	$r = 0.149$,, ,, 5%
(4) E Dominance	$r = 0.129$,, ,, ,,
(8) I Premsia	$r = 0.122$,, ,, ,,

while the second order factor of (17) Introversion correlates higher than these with $r = 0.202$ (sig. at 1%): The correlation with Eysenck's

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Scored towards high anxiety the range is 9 - 90 with the mean at 49.5.

On this occasion the mean obtained for the whole group is 52.957 with no significance in the difference between the men's mean of 52.012 and that of the women with 53.429 ($t = 0.985$), but both groups are appreciably higher, towards the greater anxiety end of the continuum, than Cattell's norms.

As in the case of Introversion, the five constituent factors in the present second order factor all correlate most highly :

(16) Q4 High Ergic Tension	$r = 0.634$	Sig at 1%
(3) C- Emotional Stability	$r = 0.546$,, ,, ,,
(12) O Guilt Proneness	$r = 0.530$,, ,, ,,
(15) Q3-High Self Sentiment Formation	$r = -0.481$,, ,, ,,
(9) L Protension	$r = 0.410$,, ,, ,,

A number of the other prime factors from the 16 P.F. questionnaire also correlate significantly with the present criterion as follows :

(6) G Superego Strength	$r = -0.181$	Sig. at 1%
(7) H Parmia	$r = -0.176$,, ,, ,,
(10) M Autia	$r = 0.149$,, ,, 5%
(4) E Dominance	$r = 0.129$,, ,, ,,
(8) I Premsia	$r = 0.122$,, ,, ,,

while the second order factor of (17) Introversion correlates higher than these with $r = 0.202$ (sig. at 1%): The correlation with Eysenck's

Variable 18. Second Order Anxiety

This is the major second order factor found in the 16 P.F., and is used to test the general hypotheses and those relating to the performance of those scoring high on neuroticism. It is made up of the five following prime factors, the first four of which have their sten courses weighted by doubling the raw score :-

- (3) Factor C - Emotional Stability
- (12) ,, O + Guilt Proneness
- (15) ,, Q3- High Self-Sentiment Formation
- (16) ,, Q4* High Ergic Tension
- (9) ,, L + Protension

Scored towards high anxiety the range is 9 - 90 with the mean at 49.5.

On this occasion the mean obtained for the whole group is 52.957 with no significance in the difference between the men's mean of 52.012 and that of the women with 53.429 ($t = 0.985$), but both groups are appreciably higher, towards the greater anxiety end of the continuum, than Cattell's norms.

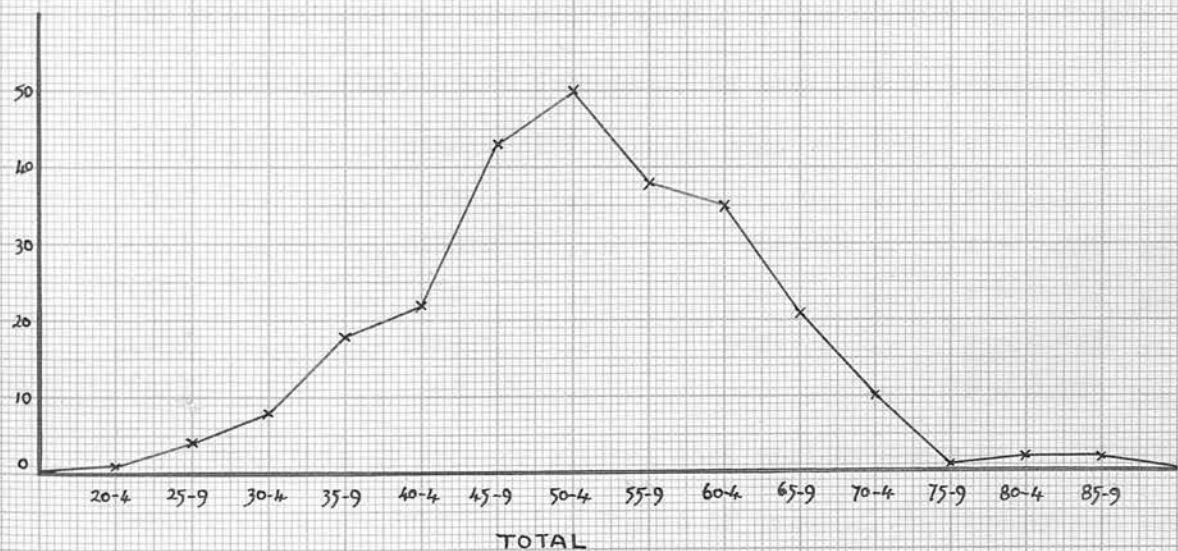
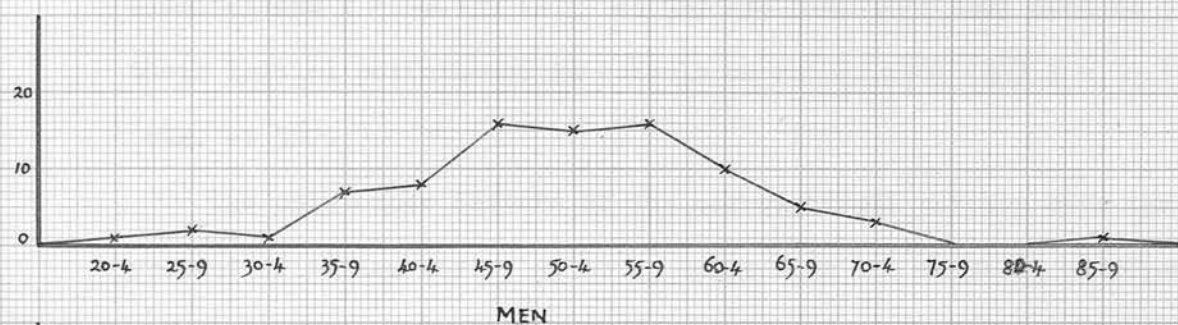
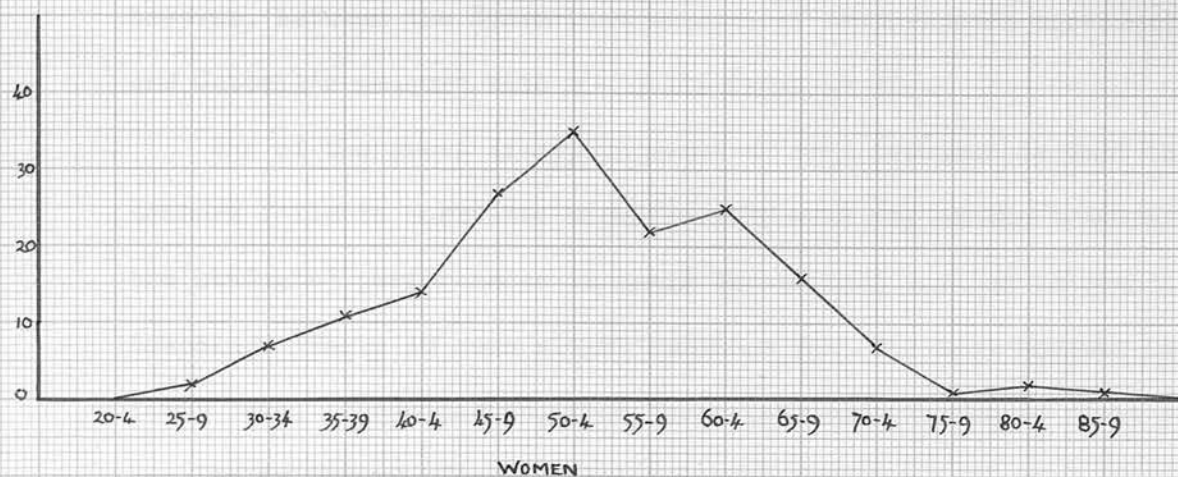
As in the case of Introversion, the five constituent factors in the present second order factor all correlate most highly :

(16) Q4 High Ergic Tension	$r = 0.634$	Sig at 1%
(3) C- Emotional Stability	$r = 0.546$,, ,, ,,
(12) O Guilt Proneness	$r = 0.530$,, ,, ,,
(15) Q3-High Self Sentiment Formation	$r = -0.481$,, ,, ,,
(9) L Protension	$r = 0.410$,, ,, ,,

A number of the other prime factors from the 16 P.F. questionnaire also correlate significantly with the present criterion as follows :

(6) G Superego Strength	$r = -0.181$	Sig. at 1%
(7) H Parmia	$r = -0.176$,, ,, ,,
(10) M Autia	$r = 0.149$,, ,, 5%
(4) E Dominance	$r = 0.129$,, ,, ,,
(8) I Premsia	$r = 0.122$,, ,, ,,

while the second order factor of (17) Introversion correlates higher than these with $r = 0.202$ (sig. at 1%): The correlation with Eysenck's



$$\bar{x} = 52.957 \quad \sigma = 10.953$$

(39) Extraversion is in the correct direction but does not approach the 5% level of significance ($r = -0.069$). There is substantial agreement, however, between the Eysenckian measure of introversion agreement, (38) and Cattell's measure, with $r = 0.406$ (sig. at 1%).

One of the great disappointments of this research is that this measure fails to correlate significantly with any of the measures of the students' performances in their theoretical work or in practical teaching. There is some slight evidence that the most anxious have a lower level of aspiration, from their (44) expectation of first year results in theory after initial teaching practice and prior to the examinations $r = -0.139$ (sig. at 5%) and also that they tend to judge their initial performance in schools as rather poor (45) $r = -0.129$ (sig. at 5%).

The only other feature of the correlational pattern with the present criterion worthy of note, apart from the negative correlation with (40), Eysenck's Lie scale, $r = -0.284$ (sig at 1%) suggesting that the most anxious are the most honest, is the consistent estimate of difficulties experienced personally or ascribed to others:

(31)	Estimate of others difficulties post 1st Prac.	$r = 0.120$	sig. at 5%
(32)	,, ,, own ,, ,, ,, ,,	$r = 0.167$,, ,, 1%
(59)	,, ,, others ,, pre 2nd ,,	$r = 0.196$,, ,, ,,
(60)	,, ,, own ,, ,, ,, ,,	$r = 0.197$,, ,, ,,
(83)	,, ,, others ,, post ,, ,,	$r = 0.147$,, ,, 5%
(84)	,, ,, own ,, ,, ,, ,,	$r = 0.225$,, ,, ,,

From this it appears evident that anxiety tends to be associated with a comparatively greater degree of personal difficulty and there is a distinct tendency for such difficulties to increase as the course progresses.

Using contrasting criterion group analysis, sorted on this criterion measure, only (16) Ergic Tension is differentiated at a significant level in the expected direction $t = 2.379$ (sig. at 5%). It therefore appears that none of the hypotheses involving this variable are supported in this investigation.

Variable 38. Eysenck's Neuroticism

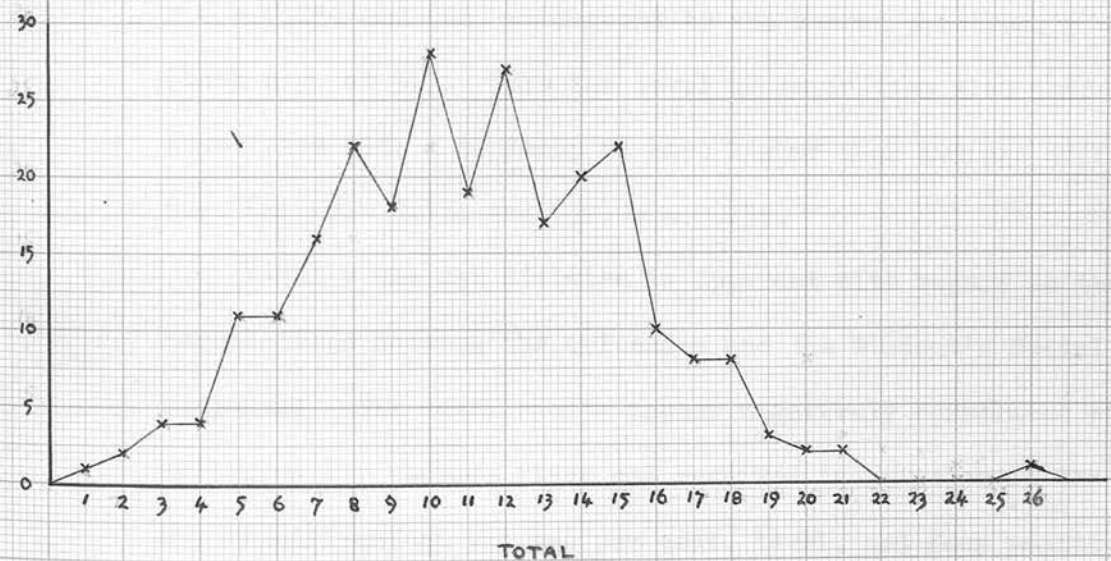
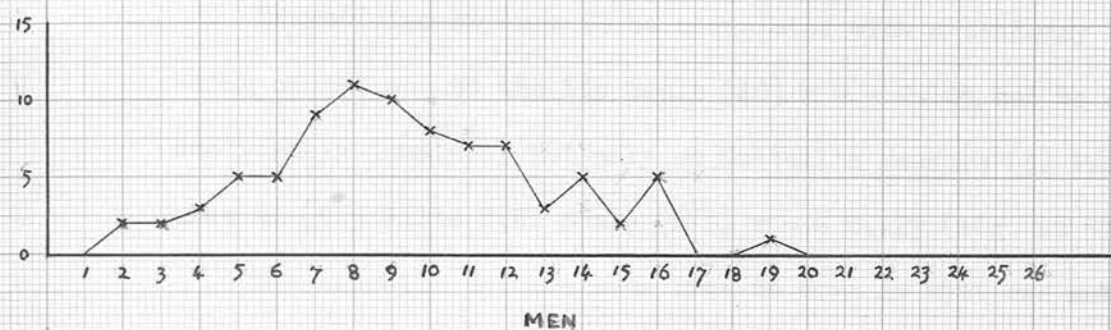
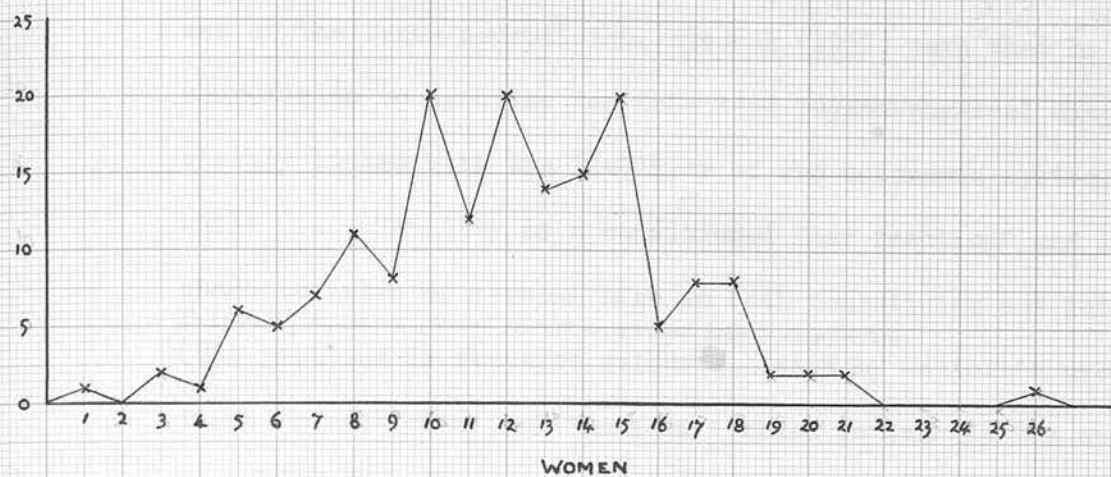
This variable tests the general hypotheses and those relating to the performances of "neurotics".

The Eysenck Personality Inventory consists of 24 Extraversion items and 24 Neuroticism ones. The handbook maintains that there are 18 lie scale questions, Eysenck (1964) P. 14, and these are derived from the Minnesota Multiphasic Personality Inventory: detailed inspection of Form B reveals, however, that there are only nine such items.

The norms given in the handbook show that the student teachers have some of the highest neurotic scores amongst those of the twenty-two groups listed with a mean of 11.833. The mean obtained in the present investigation was 11.13 for the whole group. Eysenck says that the relation with sex is small but that women tend to score higher on this factor than men (p.23). This sex difference was found also but the difference was considerable; the men's mean was 12.006, the women's 9.376, and this yields a t of 5.276 which is significant beyond 1%.

Strangely, and contrary to expectation, neuroticism was not found to be correlated at a significant level with any of the measures of student performance, nor with Cattell's second order personality factors. With regard to the 16 P.F. factors the following were found to be significantly correlated with this criterion:

(16) Ergic Tension	$r = 0.454$ sig. at 1%.
(12) Guilt Proneness	$r = 0.409$ sig. at 1%.
(3) Emotional Maturity	$r = - 0.1339$ sig. at 1%.
(8) Permsia	$r = 0.299$ sig. at 1%.
(15) Self Sentiment Formation	$r = - 0.220$ sig. at 1%.
(10) Autia	$r = 0.193$ sig. at 1%.
(7) Parmia	$r = - 0.154$ sig. at 5%.
(1) Cyclothymia	$r = 0.154$ sig. at 5%.
(9) Protension	$r = 0.147$ sig. at 5%.



$$\bar{x} = 11.13 \quad \sigma = 4.08$$

With regard to the relationship between Cattell's and Eysenck's use of the terms neuroticism, Eysenck (1963) says that he uses neuroticism to describe "an inherited psycho-physical disposition, closely linked with the liability of the autonomic system....." while "Anxiety is a conditioned fear reaction" and is primarily characteristic of persons high on both neuroticism and introversion. To Eysenck, "Anxiety is a 'mixed' concept being related both to neuroticism. (The position is rendered rather confused by Cattell's use of the terms 'neuroticism' and 'anxiety' which is exactly the opposite of Mine.)".

Neuroticism appears to be associated with a tendency to avoid being caught out on the lie scale (40) $r = - 0.185$, but to appear emotionally immature, not only on Cattell's measure (3) Factor C, but also on (51) Pitts E.M. Scale (M-L) $r = - 0.129$ (sig. at 5%).

The neurotic pattern runs true to form in that two measures indicate the tendency for the high scores to estimate these chances at the end of the third year as low (41) Prior to 1st Practice $r = - 0.156$ and (86) subsequent to the second practice, $r = - 0.124$, (both sig. at 5%). This low level of aspiration also tends to be associated with a tendency to have higher than average difficulties, e.g. (84) $r = 0.184$ and (32) $r = 0.134$.

Finally the sex division is apparent with regard to the correlations between the criterion and the Student's Social Structure responses. Six coefficients appear negatively correlated with the criterion for choices given and received in relation to the men only, all significant at the one per cent. level, and four positive significant coefficients, three at this level, occur in relation to choices given and received amongst the women.

When the contrasting criterion group analysis was made, only (74) the number of males by whom known well was differentiated significantly $t = 2.080$ (sig. at 5%), with the highest scorers on Neuroticism known by the greater number. No evidence was found to support the main hypothesis.

with the data for student-teachers given the t -test (15.61) $p < .01$ or 14.17. The present study produced a mean of 11.11 for the group, but the girls' mean of 12.612 is not significantly lower than the boys' mean of 11.37.

With regard to Brown's assertion that "although Z and S are conceptualized as being orthogonal constructs,..... small negative correlations have really been found with the M.F.I." and that goes on to account for his observed correlation of -0.391 , it can be said on this evidence that a slightly larger but still negative and insignificant correlation was produced between Z and S with a correlation of -0.127 .

Again, on the basis of S , extraversion was found to be correlated with a number of Dettl's personality test by the subject who the correlation with the Social Desirability Index of (17) was -0.391 which produced a correlation of -0.127 (sig. at 10%). This negative sign actually represents the small correlation along the continuum between extraversion and neuroticism.

Other correlations on M.F.I. were:

(1) Anxiety	$r = 0.413$ sig. at 1%
(2) Depression	$r = 0.350$ " " "
(3) Self Satisfaction	$r = 0.322$ " " "
(4) Dominance	$r = 0.284$ " " "
(5) Selfishness	$r = 0.241$ " " "
(6) Self Esteem Potential	$r = 0.191$ " " "
(10) Ambition	$r = 0.112$ " " "

Variable 39. Eysenck's Extraversion

This predictor variable attempts to prove the assertion that the more **extrovert** may perform best in practical teaching as opposed to theory performance.

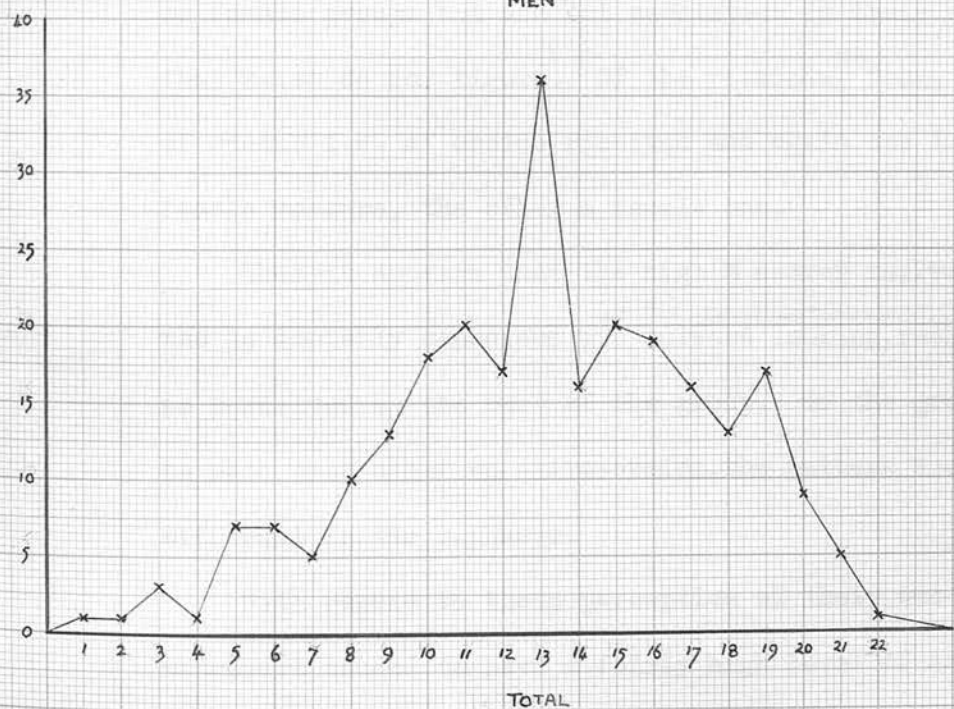
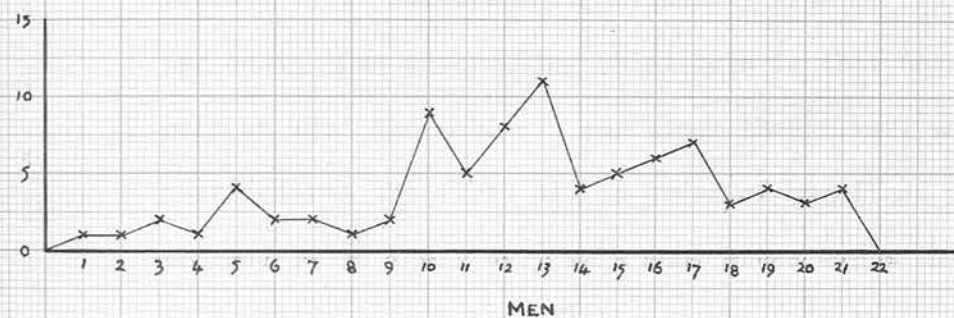
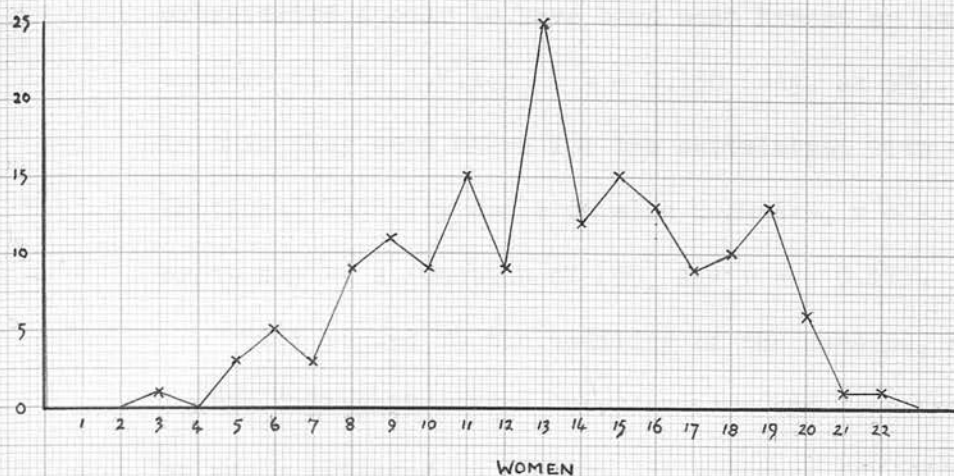
As already indicated the range of scores for this variable is 0 - 24 with the mean for student-teachers given by Eysenck (19 64) p. 16 as 14.515. The present study produced a mean of 13.18 for the group, but the men's mean of 12.812 is not significantly lower than the women's one of 13.371.

With regard to Eysenck's assertion that "Although E and N are conceptualized as being orthogonal reactors.....small negative correlations have really been found with the M.P.1" and then goes on to account for his observed correlation of - 0.091, it was found on this occasion that a slightly larger but still negative and insignificantly low coefficient was produced between E and N, with a correlation of - 0.107.

Again, as in the case of N, Extraversion was found to be associated with a number of Cattell's **primary** factors but by far the highest was the correspondence with the Second order factor of (17) Introversion which produced a correlation of = - 0.513 (sig. beyond 1%); this negative sign naturally representing the **result from** scoring along the continuum of **Introversion-Extraversion** in the reverse order on the tests.

The other correlations on 16 P.F. were:-

(5) Surgency	$r = 0.483$	sig. at 1%.
(7) Parmia	$r = 0.350$	" " "
(14) Self Sufficiency	$r = - 0.322$	" " "
(4) Dominance	$r = 0.294$	" " "
(1) Cyclothymia	$r = 0.241$	" " "
(15) Self Sentiment Formation	$r = - 0.151$	" " 5%.
(10) Autia	$r = 0.122$	" " "



$$\bar{x} = 13.18 \quad \sigma = 4.27$$

The interview too appeared to favour the introverted rather than the extraverted: (35) $r = - 0.194$ (sig. at 1%) but the most extraverted appear to have been most honest or consistent in their answers on the E.P.I.: $r = - 0.150$ (sig. at 5%). It is possible that in this they were naïve for the correlation with the (52) Pitts Emotional Maturity Scale is also negative, $r = - 0.123$ (sig. at 5%), or, it may be a function of (55) Age $r = - 0.172$.

With regard to the validity of the measure, as far as the responses on the College Reaction Questionnaire are concerned, there appears to be ample evidence to support its accuracy, for no fewer than ten measures yielded by it correlate significantly with E, four of them beyond one per cent. One interesting point here is that both documents ostensibly rely on what the subjects say about themselves, and of these ten coefficients the first six in order of magnitude refer to "others claimed to be known very well" and these are either of mixed groups or female groups but are not consistent in their pattern except that males do not figure. Of the remaining four, only two are measures of status i.e. of choice received and again one is a mixed male and female measure, the other a female one.

Thus, it appears that the high E scorer represents the individual who is socially conscious and outward looking, rather than one who is so perceived by the rest of the group. If the group^{members} had been asked to note each other on extraversion, the pattern would probably have been different in its emphasis.

With regard to their perception of their own performances, the more extravert tended to have a fairly high level of Aspiration as far as the (42) First Teaching Practice was concerned $r = 0.125$ (sig. at 5%), but they were rather prone to be in error in this respect generally, as witness their (63) Goal Discrepancy on this occasion $r = 0.137$ (sig. at 5%).

They also tended to anticipate a higher level of difficulty before the 1st Practice and to change their minds after the event claiming they found lower than average difficulty after the event and, although the most extravert did not differ significantly from the most introvert in this respect, the change over the practice was significantly correlated with extraversion (57) $r = 0.122$.

Finally, with regard to actual student performances, where coefficients reached a significant level at five per cent they were, without exception negative. This applies to the following theory results:

(20) English Year I	$r = - 0.174$	Sig. at 1%.
(90) Education Year 3	$r = - 0.226$	" " "
(87) English Year 2	$r = - 0.134$	" " 5%.
(61) Teaching Practice Year 2	$t = - 0.105$	" " "

To this extent the hypothesis that high introverts perform better than extraverts in academic performance appears to be supported. But the second half of the hypothesis is not supported, for the correlation with (91) Final Teaching is also negative $r = - 0.137$ (sig. at 5%), which fails to show that extraverts are superior to introverts in practical teaching, but rather the ~~reverse, in that~~ of introversion is also associated with practical teaching performance. The contrasting criterion analysis adds nothing to this conclusion for only (7) Parmia is differentiated at 5% with the more adventurous scoring highest, $t = 2.147$.

40 Eysenck's Lie Score

This variable is considered in relation to the general hypothesis.

The general mean lie score given by Eysenck is 1.383 and on the present occasion the general mean was 2.18 with no significance in the difference between the sexes.

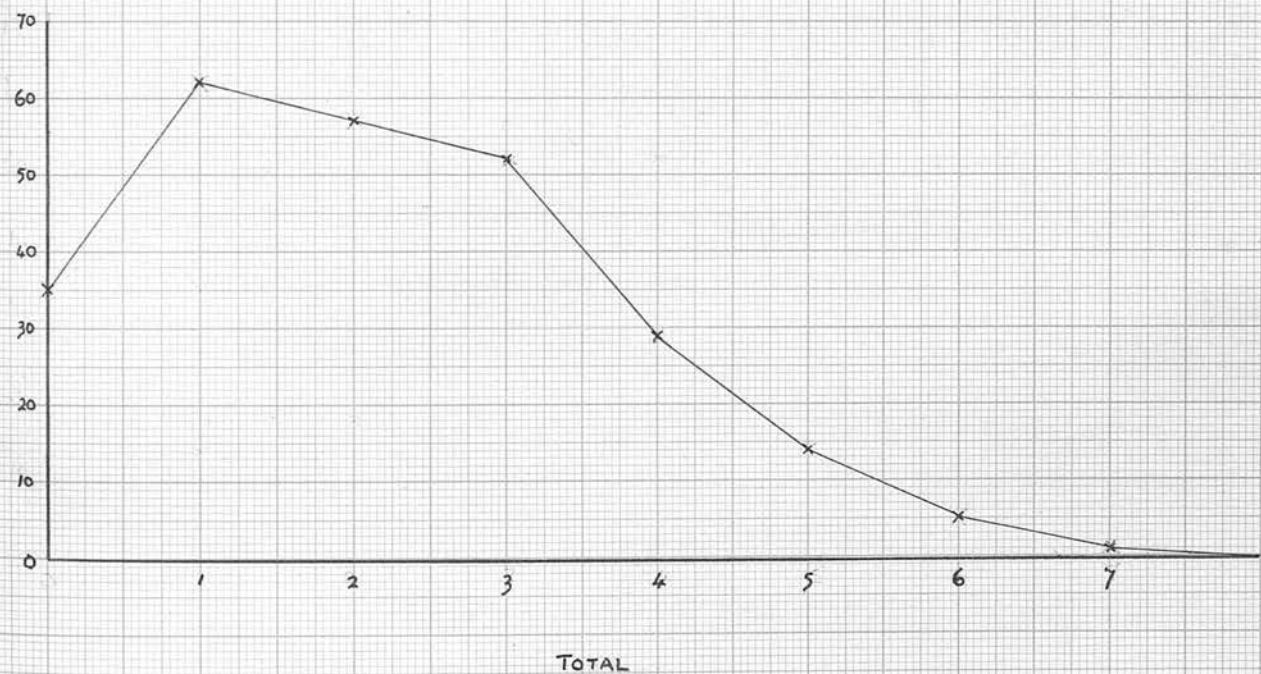
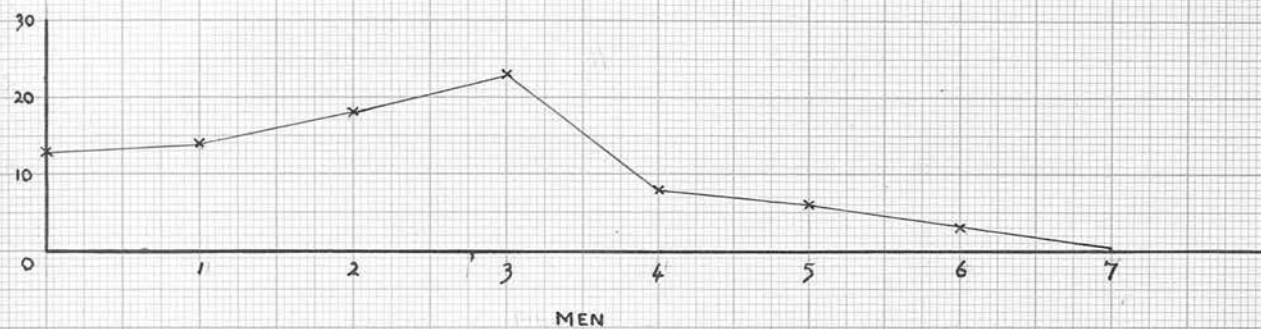
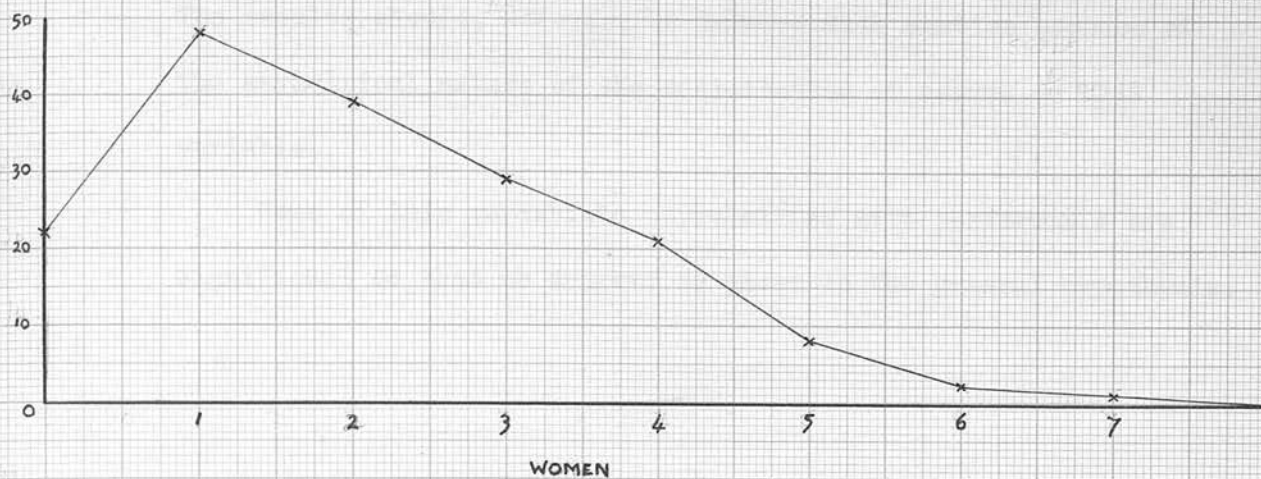
There appears to be no connection between a high score on this factor and any measure of student performance but five other variables are positively associated with this criterion. The three which are at the higher level of significance are the following:

- | | |
|-------------------------------|-------------|
| (6) Superego strength | $r = 0.327$ |
| (3) Emotional Maturity | $r = 0.282$ |
| (15) Self Sentiment Formation | $r = 0.145$ |

It appears, therefore, as if those who have a high opinion of themselves, are mature and persistent and are prepared to falsify their responses - or are liable to be inconsistent in them.

At the lower level it appears that (27) those with a critical attitude to teaching on the M.T.A.I. have a higher lie score ($r = 0.145$), and also that those in this later category claim a high score in their judgement of performance on their first teaching practice, (45) with $r = 0.145$.

Those with the highest L score appear low on (16) Ergic Tension $r = - 0.317$ and (9) Protension $r = - 0.276$ and give low estimates of their own and others' difficulties (84, 83 and 60), all of which, except for the last, are significant at the 1% level. Also in the upper significance category are the correlations with (38) Neuroticism $r = - 0.185$ and (12) Guilt Proneness, while at the lower level are those with (39) Extraversion, $r = - 0.150$, and the (28) M.T.A.I. Final $r = - 0.136$ and the (26) M.T.A.I. Pro scores $r = - 0.116$. In each of these instances it seems probable that the items were "fake good" and the sociably desirable responses were selected and this tendency was then identified on the Lie scale.



$$\bar{x} = 2.18 \quad \sigma = 1.52$$

The results should, however, be treated with caution because of the asymmetrical nature of the distribution of scores on this variable.

None of this variable's correlations with performance are significant so that no support is given to the general hypothesis.

alternative scoring system was suggested by James which would require the entire population to be a part of the total pattern of responses. It was decided to present the results for using this system in the investigation.

The mean score for (51) is 1.57 and for (52) 1.57.

Table 1. Data of these two variables are as follows:

	Mean	St. Dev.	Range	Min.	Max.
(51)	1.57	.45	1-3	1	3
(52)	1.57	.45	1-3	1	3

This pattern of agreement between the two variables is in complete agreement with the correlation of $r = 0.97$, $p < 0.001$, at the 1% level. The correlation is in fact stronger than the 1% level and is in fact stronger than the 1% level.

The largest block of correlations is for the two variables.

Table 2. Data of these two variables are as follows:

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Variables 51 and 52 Pitts' Emotional Maturity Scale

This scale is used to test the hypothesis that emotional maturity is an important factor in the more successful performances of students.

The Pitts Scale was originally devised to be scored by the difference between the mature and immature responses but an alternative scoring system was suggested by Vernon which would express the mature responses as a ratio of the total pattern of responses. It was decided to compare the results for using both systems in the investigation.

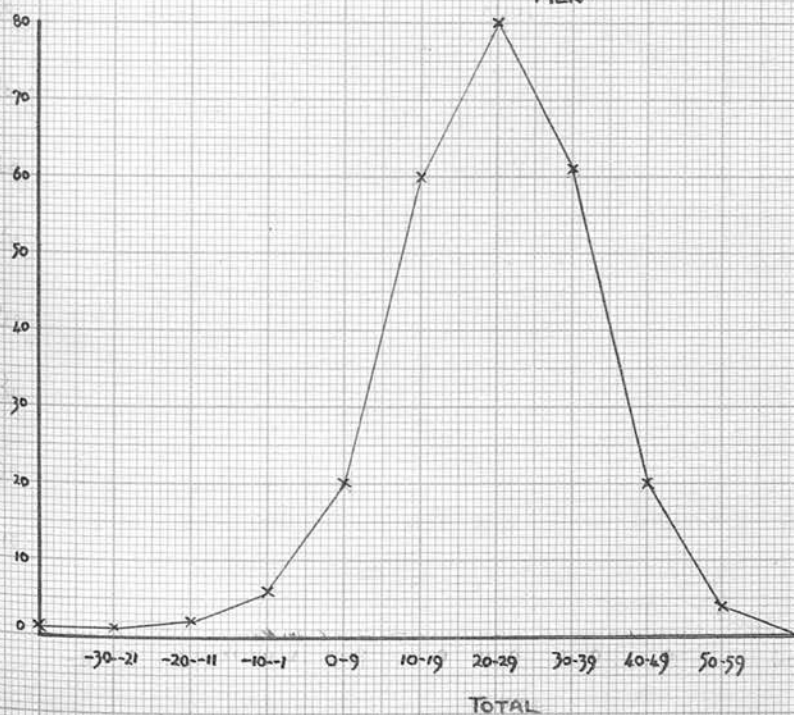
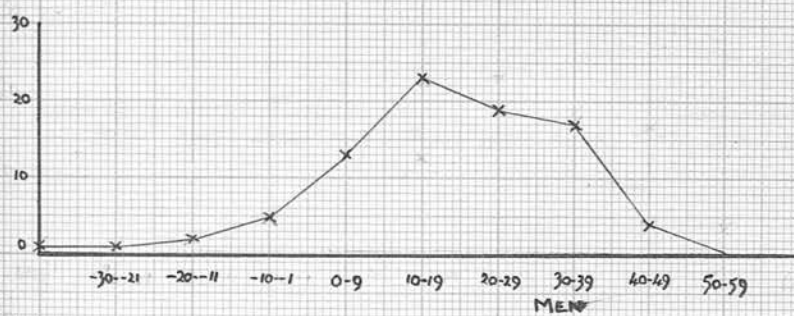
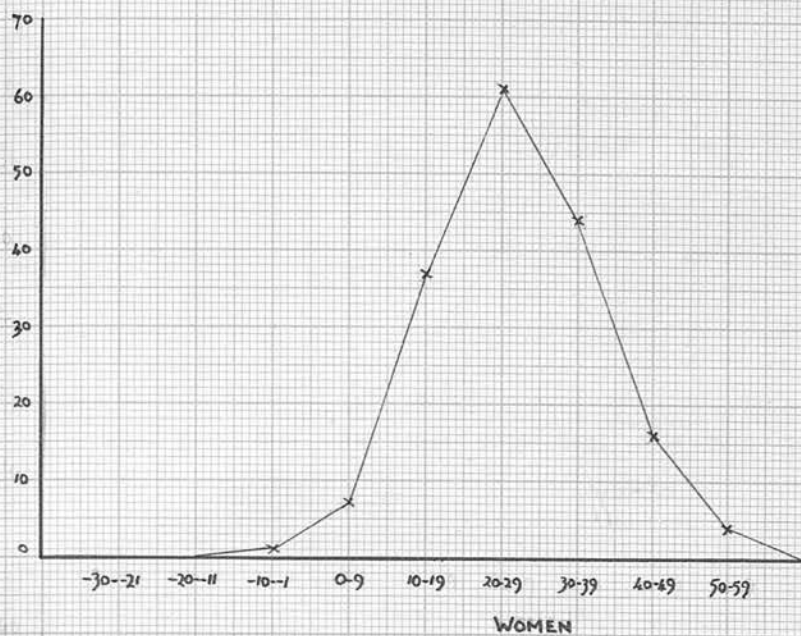
The mean score for (51) $M - I$ for is 23.37 and for (52) $\frac{M}{M+I}$ 64.64. Both of these show a considerable sex difference:

	Men.	Women	t	Sig.
(51)	17.776	26. 165	4.559	1%
(52)	61.671	66. 118	3.8024	1%

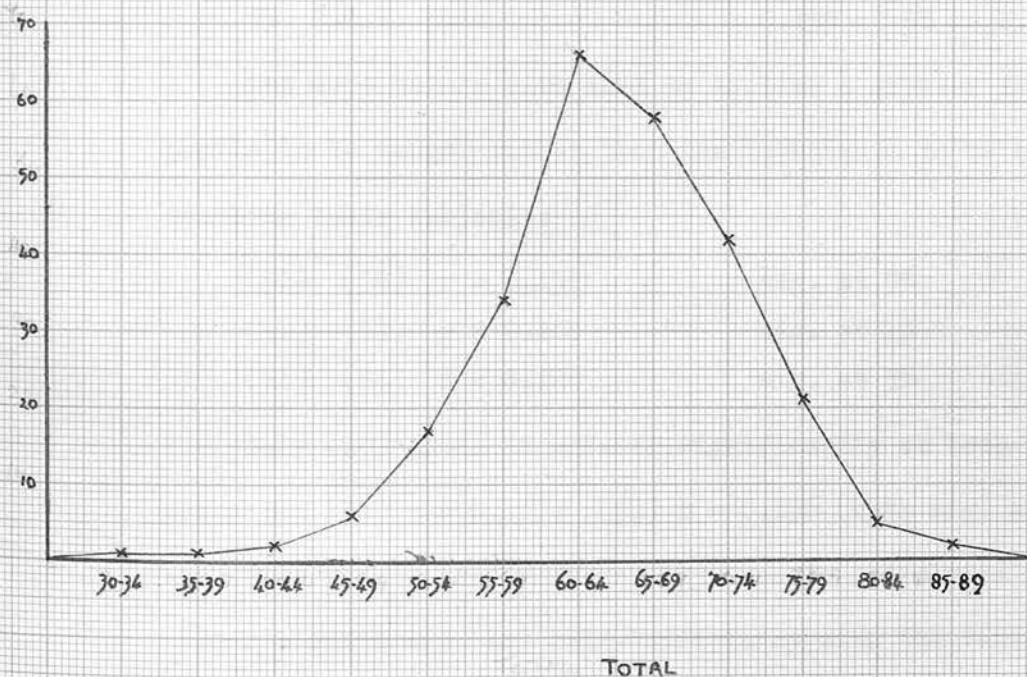
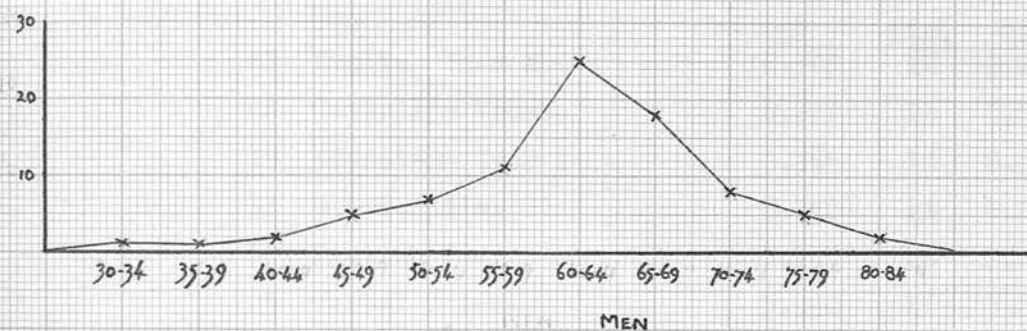
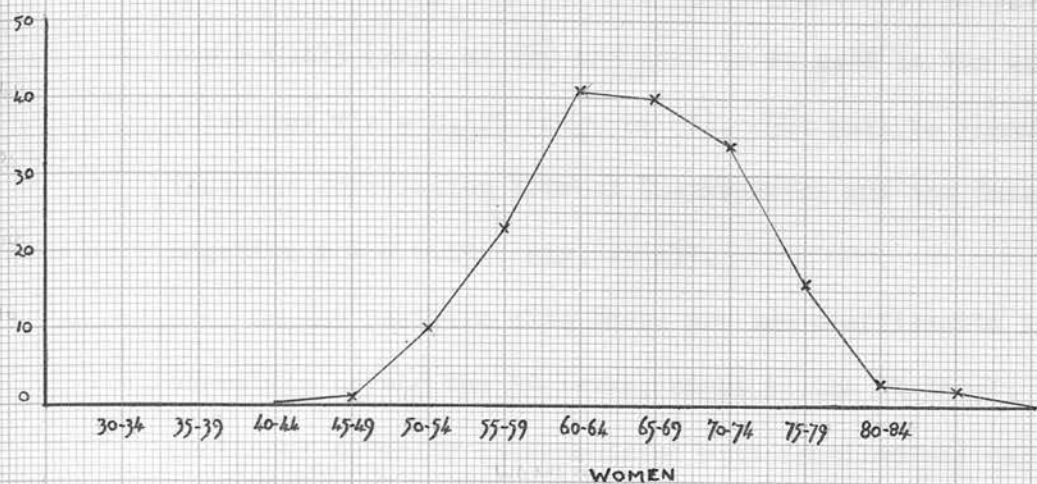
This pattern of agreement between the two scoring estimates is supported by the correlation between the two with $r = 0.789$ (sig. at 1%), and this in turn reflects itself in the agreement that both reveal in their correlations with other variables.

The largest block of correlations common to both are the eleven negative coefficients, ten significant at the 1% level, derived from the measures of acquaintance with males or combined male and female groups i.e. the more students known, or by whom known, the less emotionally mature the student: this generalization is in line with the sex difference shown above.

Also^{related} on the negative side on both estimates is the estimate of the first practice grade before the event (51: $r = - 0.148$, sig. at 5%; 52 $r = - 0.176$, sig. at 1%), which suggests that initially the least mature have the highest aspirations and that after the practice, it appears that they also tend to judge their performances in a favourable light (51: $r = - 0.189$ and 52, $r = - 0.199$, both sig. at 1%). There is also the suggestion that initially those scored as immature



$$\bar{x} = 23.37 \quad \sigma = 12.99$$



$$\bar{x} = 64.64 \quad \sigma = 8.43$$

have the highest personal difficulties (51: 30 $r = - 0.123$ sig. at 5%) and that they tend to have the highest (39) Extraversion scores $r = - 0.123$ (sig. at 5%) and tend to do well in the admission (35) Interview $r = - 0.125$ (sig. at 5%). (It will be remembered, however, that the correlation between Extraversion and the interview was also negative $r = - 0.194$, sig. at 1%).

On the positive side there are ten coefficients in common which correlate beyond the 5% level, eight at the 1% level. It appears that emotional maturity is associated with intellectual capacity and academic attainment along the following lines.

	<u>51</u>	<u>Sig.</u>	<u>52</u>	<u>Sig.</u>
87 English Year 2	0.305	1%	0.263	1%
24 Cattell's Vocab.	0.272	1%	0.243	1%
19 Education Year I	0.266	1%	0.194	1%
34 G.C.E. 'A's.	0.242	1%	0.273	1%
20 English Year I	0.233	1%	0.278	1%
23 Verbal Intell.	0.190	1%	0.208	1%
89 Education Year 2	0.171	1%	0.123	5%
33 G.C.E. 'O's	0.135	5%	N.S.	

The more mature also tend to ascribe a greater importance to the pupils to be taught rather than the techniques to be employed in teaching their subjects:

(51) (53)	$r = 0.154$	sig. at 5%
(52) (53)	$r = 0.163$	sig. at 1%
(51) (54)	$r = 0.128$	sig. at 5%

Only (10) Autia is related significantly on both the Pitts E.M. measures: (51) $r = 0.133$; (52) $r = 0.136$ (both sig. at 5%), and of the other personality factors, (8) Premsia correlates with the former (51) $r = 0.151$ and (14) Self-Sufficiency with the latter, (52) $r = 0.162$ significant at the 5% and 1% levels, respectively. These seem so eminently reasonable that they require little comment, except to say that the quality of sensitivity in Premsia appears to be the regard for others which comes with emotional maturity.

Finally, the M.T.A.I. pro and final scores are significantly correlated at the 5% level with (51) Pitts' (M - I), (26) $r = 0.146$; (28) $r = 0.136$.

It appears, therefore, as if there is ample support for the hypothesis as far as academic performances are concerned, if not teaching performances, that emotional maturity is related to successful performance.

Although these findings might be more highly related to personality factors than the complete total score. In the event the three elements are highly related:



They supported an effort to test the initial hypothesis by means of an independent measuring instrument.

The correlations in the three elements can be summarized as follows:

		Mean	Standard Deviation	r	sig.
(26)	M.T.A.I. Pro	11.247	31.341	0.94	0.01
(27)	" Anti	0.412	36.301	0.94	0.01
(28)	" Final	5.111	29.129	0.94	0.01

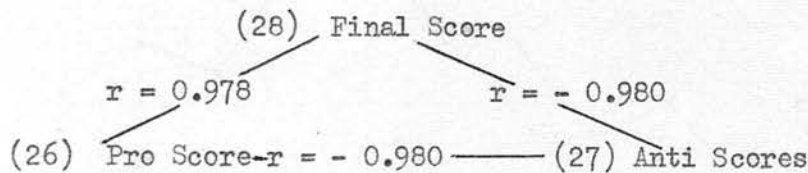
As can be seen, the three elements are highly related. The two who have the most critical attitude, the Final Score in the M.T.A.I. Manual with the scale measurement of University Freshman. The range for this scale is from 11 to 41.

In relation to the Final Score, the Pro Score correlated in the same pattern of positive relationships except that (15) Pitts' is added to the Final's pattern $r = 0.291$ (sig. at 5%). This is correlated with practical teaching performance given by the college, not with any evidence of the student's teaching potential before the exam, or subsequent to exam. Thus the main finding is in line with the hypothesis of the M.T.A.I.

The Minnesota Teacher Attitude Inventory

Variables 26, 27 and 28.

The main variable in this group is the final scores on the M.T.A.I. represented by variable 28, while the other two represent variously the pro or 'right' scores in 26, and the anti or 'wrong' scores in 27 on the same instrument, and are an attempt to see whether these elements might be more highly related to personality or performance factors than the complete total score. In the event the three elements are highly related:



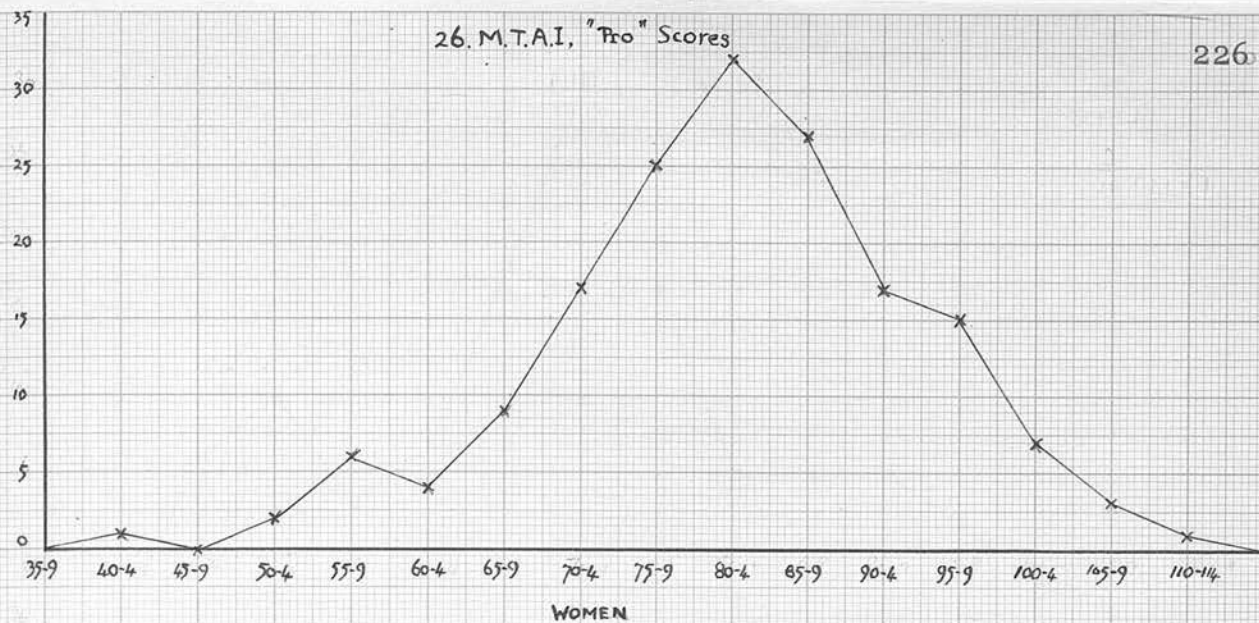
They represent an attempt to test the initial hypothesis by means of an attitudinal measuring instrument.

The sex difference on the three elements can be summarized as follows:-

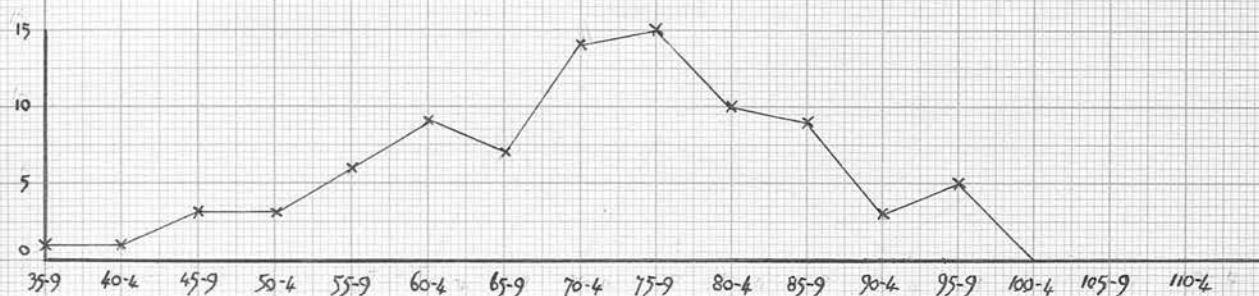
			<u>Men.</u>	<u>Women.</u>	<u>t</u>	<u>Sig.</u>
(26)	M.T.A.I. Pro.	1	72.847	81.441	4.96	1%.
(27)	" Anti		63.624	56.365	3.84	1%.
(28)	" Final		9.141	25.129	4.49	1%.

Thus women tend to score more highly on the test than the men who have the more critical attitude. The final score in the M.T.A.I. Manual with the sole exception of University freshmen^{is considerably above that obtained in the present study.} The range for other groups is from 44 to 80.

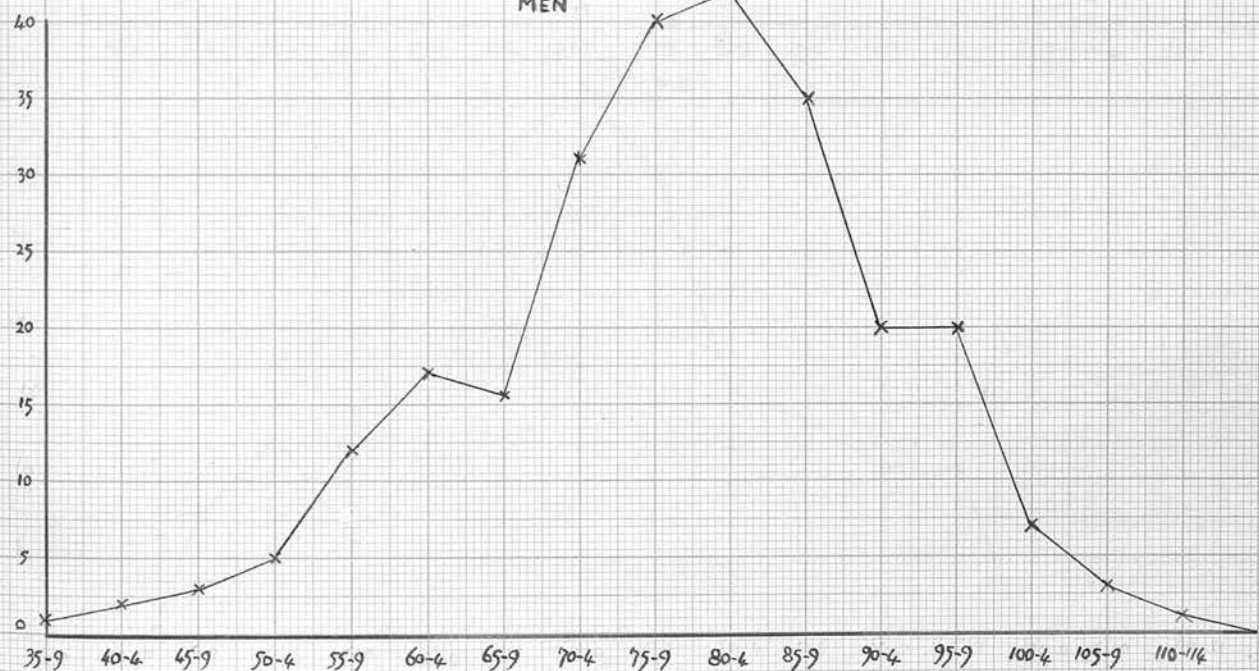
In relation to the Final scores, the Pro scores correlated in the same pattern of positive relationships except, that (13) Radicalism is added in the Final's pattern $r = 0.131$ (sig. at 5%). None is correlated with practical teaching performance given by the college, nor with any estimates by the students of their teaching potential before the events, or subsequent to them. Thus the main finding is in line with the critics of the M.T.A.I.



WOMEN



MEN



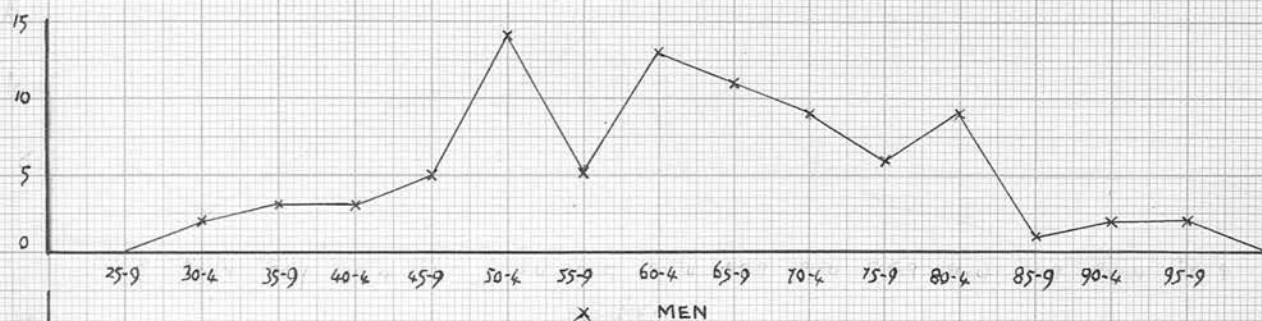
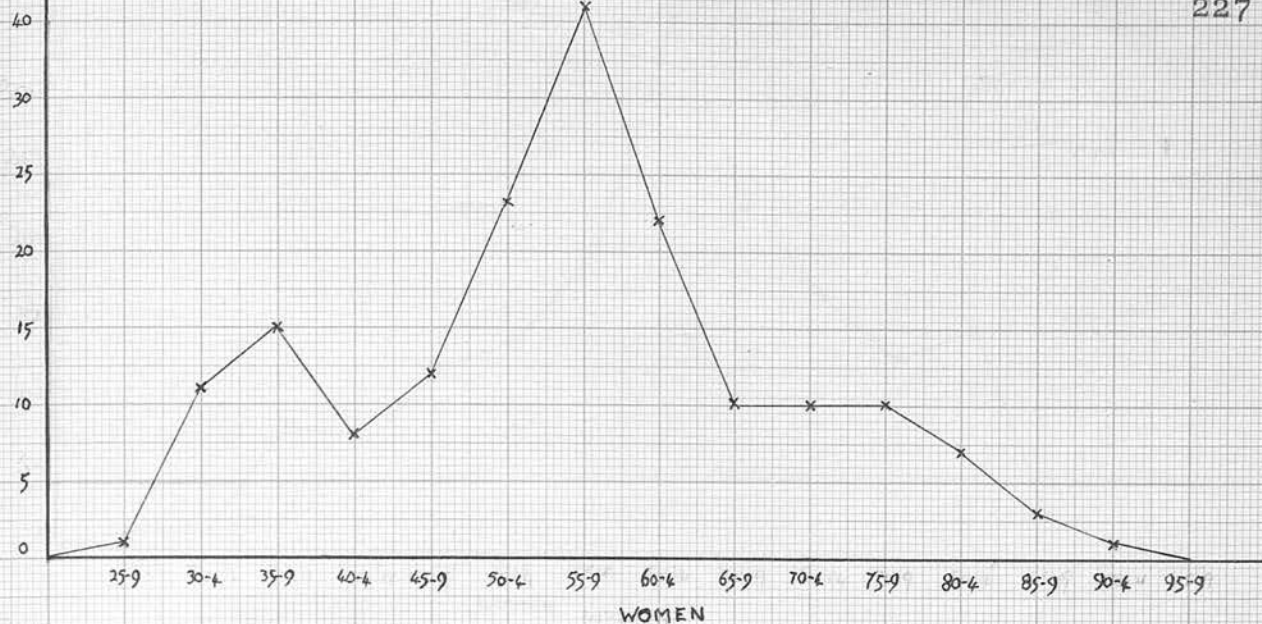
TOTAL

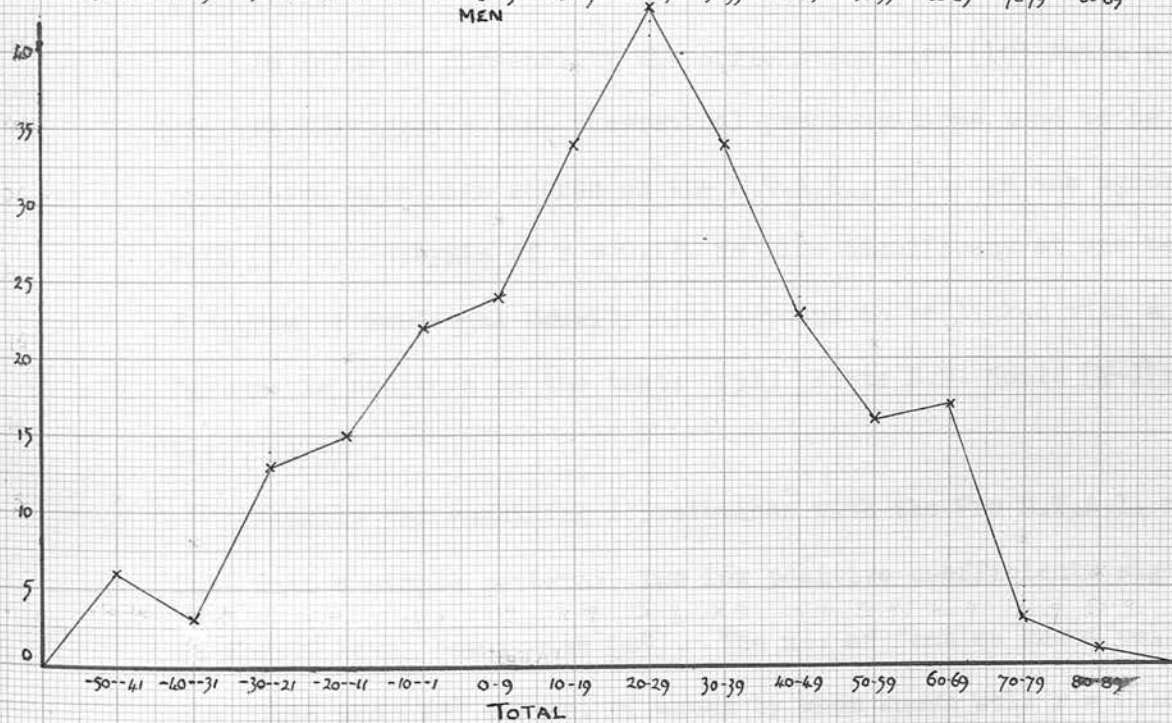
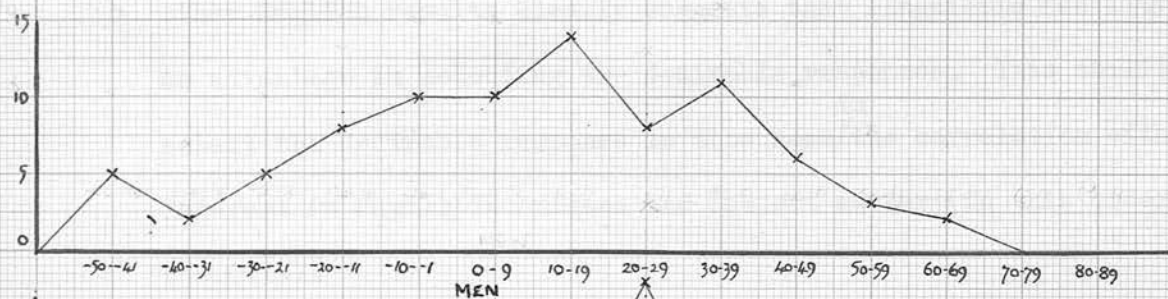
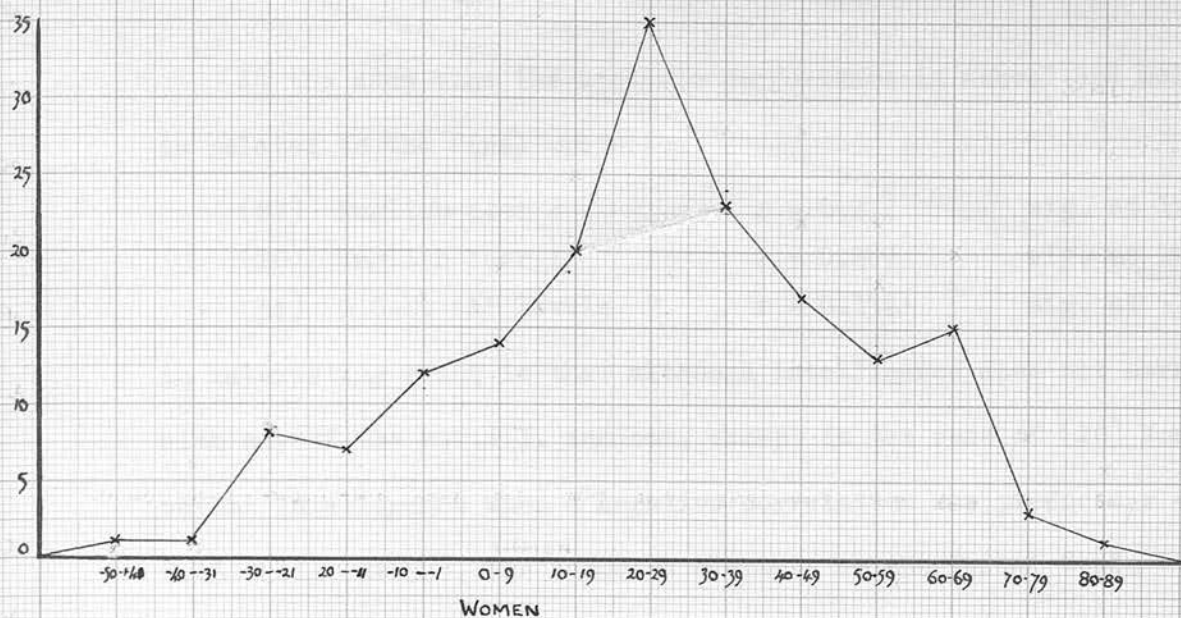
$$\bar{x} = 78.58$$

$$\sigma = 13.35$$

27 M.T.A.I. "Anti" Scores

227





$$\bar{x} = 19.80$$

$$\sigma = 27.28$$

At the same time the academic performance in school and college is related to the Final criterion:

(87) English Year 2	$r = 0.272$	sig. at 1%.
(20) English Year I	$r = 0.269$	sig. at 1%.
(34) G.C.E. 'A' levels	$r = 0.156$	sig. at 5%.

An interesting point is that although intelligence does not correlate with any of the M.T.A.I. indices, except in the case of (20) Non verbal Intelligence when a negative correlation was produced $r = -0.134$ (sig. at 5%), the language elements on the Verbal Scale correlates $r = 0.147$ (sig. at 5%) which in conjunction with the other English results clearly suggests that linguistic facility is an advantage in selecting the desirable responses. This ability to select the desirable response is also seenⁱⁿ the correlation with (53) Interest in Pupils/Techniques and Subject matter (in this order) $r = 0.177$.

In terms of personality the correlation with (10) Autia $r = 0.233$, (sig. at 1%) suggests that theoretical preoccupations tend to be associated with high scores on the M.T.A.I., although the agreement with (1) Cyclothymia of $r = 0.170$ is also significant at one per cent. A degree of Emotional Maturity also appears to be linked with a favourable attitude on the test; (51) Pitts E.M. Scale (~~M-I~~) $r = 0.146$. (sig. at 5%).

Finally the remaining correlations with the Pro M.T.A.I. scores fall into a simple pattern: Two low positive coefficients significant at the 5% level occur with (69). The no. of females known well $r = 0.146$ and (78) the no. of women by whom known well $r = 0.144$. But on the negative side are ten coefficients, nine significant at 1%, all either involving degrees of acquaintance with, or recognition from men students, either alone or in combined groups. This reflects the sex difference very clearly.

Variable 23. Cattell's Verbal Intelligence

The other two elements contribute nothing of real importance, but merely vary the levels of significance of individual coefficients and the mean raw score obtained for the sample was 93.17 with that slightly and switch the sign according to whether they represent of the women 94.762 and the men 89.941 indicating a difference in attitudinal measures scored in a positive or negative direction. favour of the men significant beyond 1% ($t = 5.362$). Thus we have Thus the M.T.A.I. adds nothing to the prognosis of teaching ability the opposite position to the performance of the sexes on the non-verbal on any of the three college practices and in its association with instrument. Using Cattell's (1952) table of norms these results academic performance tends to reflect the student level of attainment approximate to an I.Q. average of 132 - 138. Like the previous rather than to forecast it.

This predictor variable fails support any of the hypotheses. Hardly surprisingly, since the factor is derived from the variable regarding personality and performance.

under consideration at present, the highest correlation is with the 'contaminated' (24) Cattell's Verbal Intelligence test with the perceptual items removed, $r = 0.733$ significant beyond 1%. Probably as much because intelligence plays a part in academic performance as that the language element is common to both situations, there is significant positive agreement between the English results of the first two years in College and the present criterion variable:

(20) English Year 1	$r = 0.395$ sig. at 1%.
(87) English Year 2	$r = 0.378$ sig. at 1%.

The relation with academic performance generally is again indicated by the positive correlation with these measures, although only the following reach the level of significance:

(88) Mathematics Year 2	$r = 0.186$ sig. at 1%
(33) C.C.E. 'O' levels	$r = 0.162$ sig. at 1%
(34) C.C.E. 'A' levels	$r = 0.158$ sig. at 5%
(22) Mathematics Year 1	$r = 0.151$ sig. at 5%
(90) Education Year 3	$r = 0.121$ sig. at 5%

Yet, this applies only to student performance in theoretical subjects for, when it comes to correlations between intelligence and teaching performance at each of the three annual practices, the coefficients are all negative, although two fail to reach the 5% level of significance:

Variable 23. Cattell's Verbal Intelligence

Verbal intelligence was measured by Cattell's Scale III Form A and the mean raw score obtained for the sample was 93.170 with that of the women 94.782 and the men 89.941 indicating a difference in favour of the men significant beyond 1% ($t = 3.362$). Thus we have the opposite position to the performance of the sexes on the non-verbal instrument. Using Cattell's (1952) table of norms these results approximate to an I.Q. average of 132 - 138. Like the previous measure this seeks to test the general hypothesis.

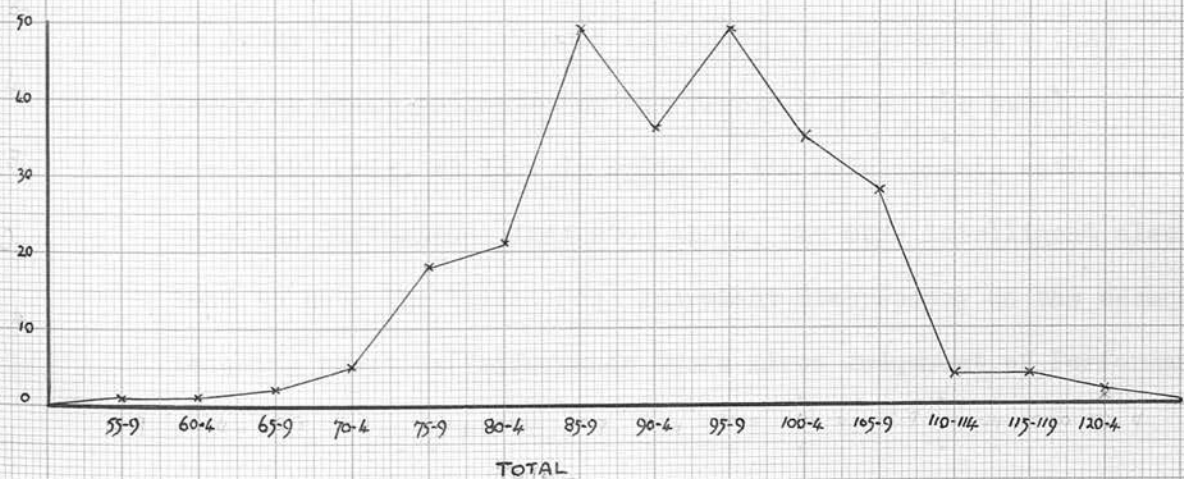
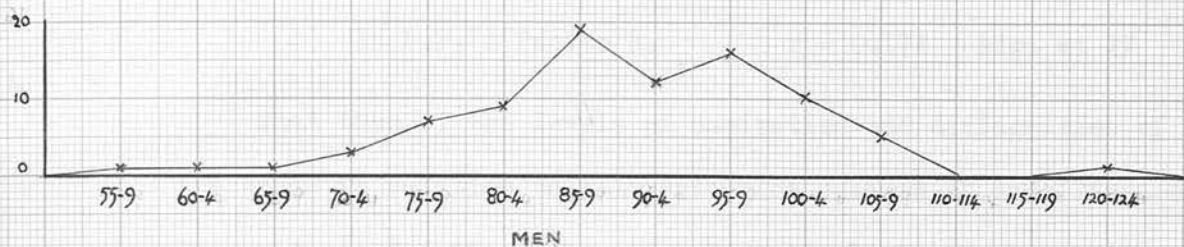
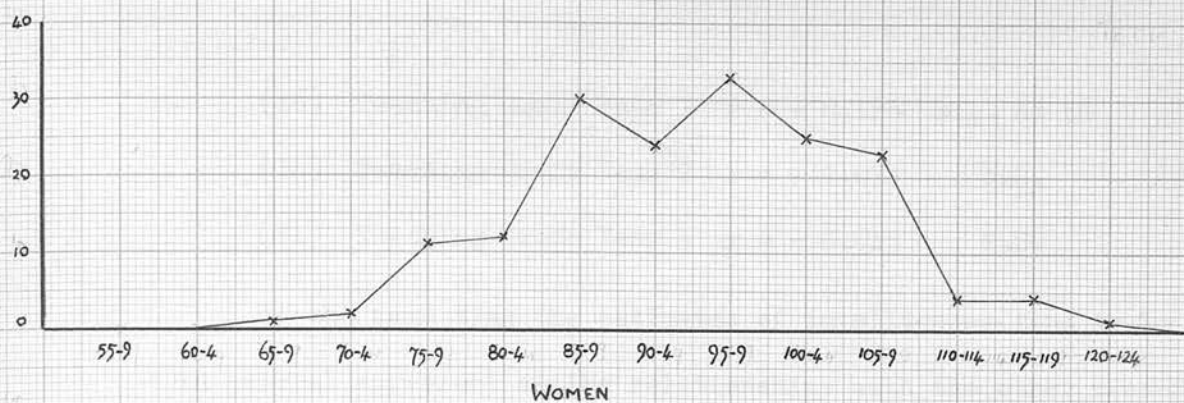
Hardly surprisingly, since the factor is derived from the variable under consideration at present, the highest correlation is with the 'contaminated' (24) Cattell's Verbal Intelligence test with the perceptual items removed, $r = 0.733$ significant beyond 1%. Probably as much because intelligence plays a part in academic performance as that the language element is common to both situations, there is significant positive agreement between the English results of the first two years in College and the present criterion variable:

(20) English Year 1	$r = 0.393$ sig. at 1%.
(87) English Year 2	$r = 0.378$ sig. at 1%.

The relation with academic performance generally is again indicated by the positive correlation with these measures, although only the following reach the level of significance:

(88) Mathematics Year 2	$r = 0.186$ sig. at 1%
(33) G.C.E. 'O' levels	$r = 0.182$ sig. at 1%
(34) G.C.E. 'A' levels	$r = 0.158$ sig. at 5%
(22) Mathematics Year I	$r = 0.151$ sig. at 5%
(90) Education Year 3	$r = 0.121$ sig. at 5%

Yet, this applies only to student performances in theoretical subjects for, when it comes to correlations between intelligence and teaching performance at each of the three annual practices, the coefficients are all negative, although two fail to reach the 5% level of significance:



$$\bar{x} = 93.17 \quad \sigma = 10.81$$

- (46) Teaching Grade Year 1 $r = - 0.126$ sig. at 5%
 (16) Teaching Grade Year 2 $r = - 0.074$ N.S.
 (91) Teaching Grade Year 3 $r = - 0.015$ N.S.

At the same time the estimates of intelligence tend to be in general agreement as the relationships with the other measures of this factor indicate:

- (21) Cattell's Non Verbal Test $r = 0.261$ sig. at 1%
 (2) 16 P.F.'s Factor B. $r = 0.174$ sig. at 1%

What then of the levels of aspiration and difficulties of the group in relation to this criterion measure of intelligence? The evidence for the former is not particularly strong, coming as it does from one measure significantly related to the criterion:

(43) Teaching Grade estimate for 1st Practice prior to the event $r = - 0.193$, (sig. at 1%) suggesting that more intelligent have the lower aspiration level. But the more intelligent tend to judge their performances favourably in retrospect - (44) Teaching Grade estimate for 1st Practice after the event $r = 0.181$ (sig. at 1%). In spite of the relationship with the teaching performance indicated above, the more intelligent also tend to have the lowest (64) Judgement Discrepancy on the second teaching practice (Performance Grade minus Judgement of Performance). $r = - 0.134$ (sig. at 5%).

With regard to the estimation of difficulty, no direct relationship has been found to occur in relation to verbal intelligence at a significant level. But intelligence does appear to be related to consistency in estimating difficulties before and after experience of practical teaching: (57) Change in the estimate of own difficulties $r = - 0.131$ (sig. at 5%) and there is also a tendency to ascribe a higher level of difficulties to others than they generally admit, witness (47) $r = 0.137$ and (36) $r = 0.131$, both significant at the 5% level.

Mention has already been made of the correlations with (1) Cyslothymia, $r = 0.199$ and (8) Premsia, $r = 0.181$. The second agrees well with these results in terms of projection. The first, measuring sociability, is not borne out by the block of eleven coefficients significant beyond 5%, nine of them beyond 1%, representing indices of those known or known well by their fellows, as well as of those claimed to be known in this way: all there are negative ranging down from $- 0.260$ for (68) No. of men known well, and $- 0.259$ for (71) No. of men known well and very well. The pattern includes correlations with combined male and female groups but, whereas, males figure in 6 by themselves, not one was with a female group alone.

Verbal intelligence also correlates significantly with the Pitts' Emotional Maturity Scale:

$$(52) \text{ Pitts' E.M. Scale } \frac{M}{M+1} \quad r = 0.209 \quad \text{sig. at } 1\%$$

$$(51) \text{ Pitts' E.M. Scale } M-1 \quad r = 0.191 \quad \text{sig. at } 1\%$$

The balance of probabilities suggests that verbal intelligence is an element causing a loading on the Emotional Maturity Scale.

Finally, it can be said that this criterion measure supports the general hypothesis although the inverse relationship with practical performance is unexpected.

Variable 24. Cattell's Verbal items (less perceptual items).

This variable is essentially Cattell's Verbal Intelligence test with the Non-verbal as perceptual items removed, and was used to see what difference a concentration on the language element would make. As such it is intended to test the first and fourth hypotheses. The mean score for the whole group was 56.93 with the women again scoring higher than the men with the scores 57.747 and 55.282 respectively, a difference which is significant at the 1% level.

Generally the pattern of correlations followed that for variable 23 very closely. Some slight changes in the levels of significance occurred, for example the (33) G.C.E. 'O' levels produced an $r = 0.126$ which is significant at 5% rather than the 1% as on the whole test, while the correlation with (34) G.C.E. 'A' levels rose to the 1% level with $r = 0.211$.

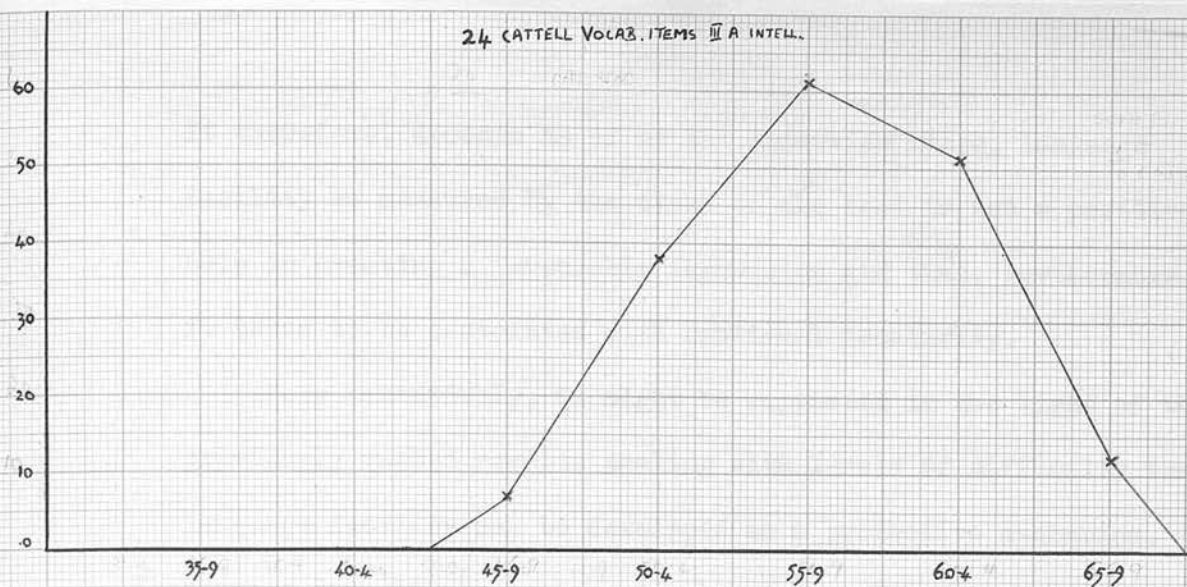
The relation with estimate of difficulty levels also became rather more explicit with:

- | | | |
|------|--|---------------------------|
| (59) | Estimate of others' difficulties Pre 2nd Prac. | $r = 0.240$
sig. at 1% |
| (83) | Estimate of others' difficulties Post " " | $r = 0.143$
sig. at 5% |

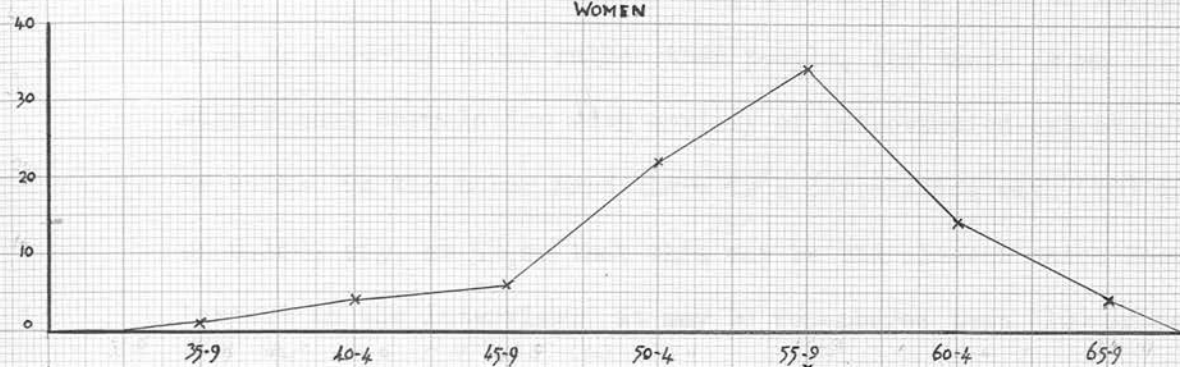
This in fact represents in almost classical terms a minor hypothesis regarding the student body. The qualifying 'almost' is used because the proposition was conceived in terms of the more sensitive tendency to ascribe a higher level of difficulty to others than themselves, and that this would be higher prior to a teaching practice than subsequent to it. In the circumstances 'articulate' might be reasonably interposed in the proposition.

On the negative side two other relationships appear at a significant level:

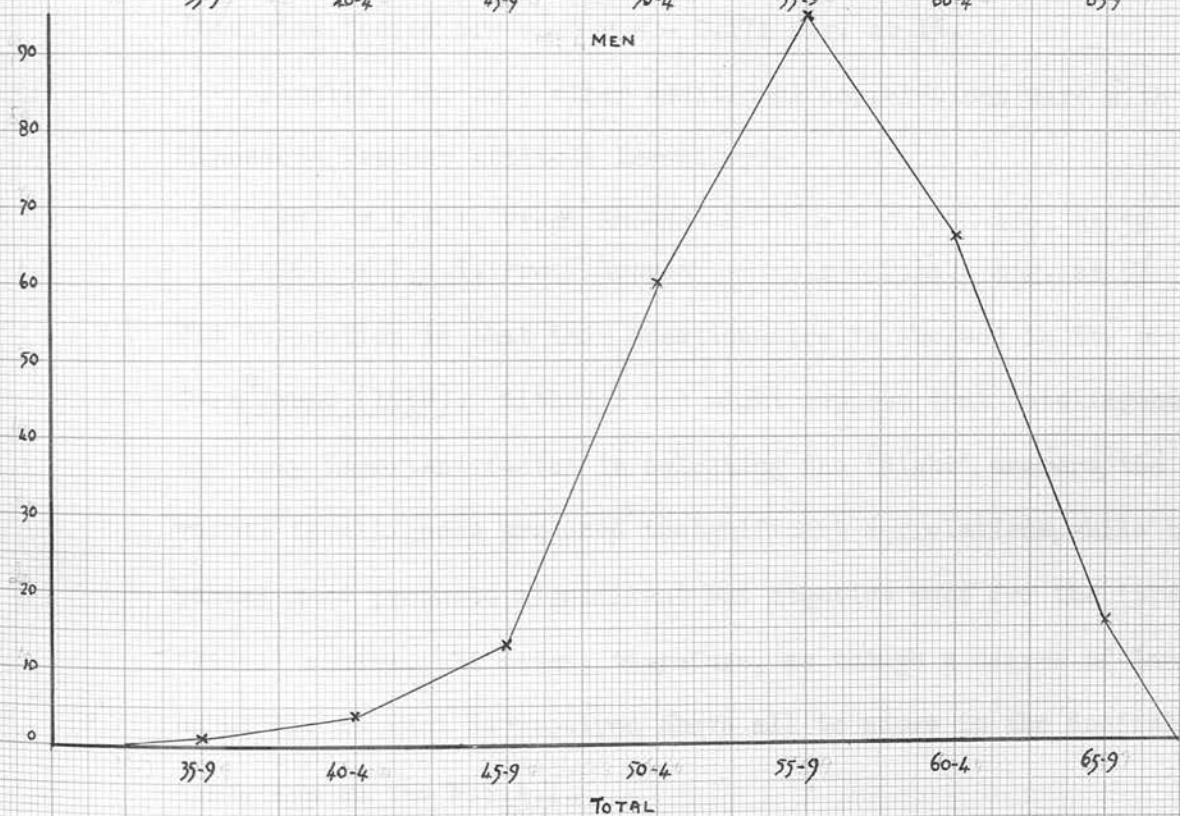
- | | | |
|------|--------------------|--------------------------|
| (35) | Interview grade | $r = - 0.143$ sig. at 5% |
| (3) | Emotional Maturity | $r = - 0.124$ sig. at 5% |



WOMEN



MEN



TOTAL

$$\bar{x} = 56.93 \quad \sigma = 5.23$$

It therefore, appears as if at the interview stage, language facility as measured by the items of the test is not a positive help in creating a favourable impression and that, furthermore, it tends to be associated with emotional immaturity.

Very tentatively, it might be suggested in the light of the previously quoted results dealing with levels of difficulty that language facility may be developed as a protective mechanism. It appears less likely to have developed as a by-product of shyness e.g. by choosing books rather than people, for there is no significant correlation with anxiety of introversion-extraversion as such. On the other hand there is a correlation with (10) Autia of 0.140, sig. at 5%, so that this may be the element which looms largest in the interview: it may be remembered that (10) Autia and Interview Scores produced $r = - 0.171$ sig. at 1%.

Finally, the only other additional correlations were with the Minnesota Teacher Attitude Inventory:-

(28) M.T.A.I. Final Scores	$r = 0.155$ sig. at 5%
(26) M.T.A.I. Pro Scores	$r = 0.147$ sig. at 5%

The suggestion is that this questionnaire is suspect in its present form ^{cf} Evans (1958). Although one might suppose that intelligence was the only important factor in selecting the 'Right' answers, the full verbal intelligence produced insignificant correlations, while the non-verbal test produced significant but negative ones for the 'pro' and 'Final' scores. It seems, therefore, as though a degree of language expertise is what is required above all to score in the desirable direction on the M.T.A.I..

Thus, the specifically linguistic aspect does not appear to be significantly related to any aspect of personal performance in academic work at college, in theory or in teaching.

Variable 21. Cattell's Non Verbal Intelligence

As agreed in the introduction to this dissertation, 'personality' is taken as applying to the person's intellectual or cognitive structure, as well as the emotional. So this variable tests the general hypothesis.

In the handbook to the non-verbal intelligence test (Culture Fair Scale 3, Form A), Cattell argues that this measure indicates potential rather than realized ability. The other two main measures of intellectual ability are found elsewhere. (P.145 and 231).

The mean raw score for the sample was 26.21 with that of the men 26.941 and that of the women 25.841 which is a significant difference at the 5% in favour of the men. This compares with scores from 1097 U.S.A. undergraduates given by Cattell (1959) P. 51 where the mean was 26.1.

The validity of the measure is supported by the positive correlation with the other measures of intelligence used in the investigation:

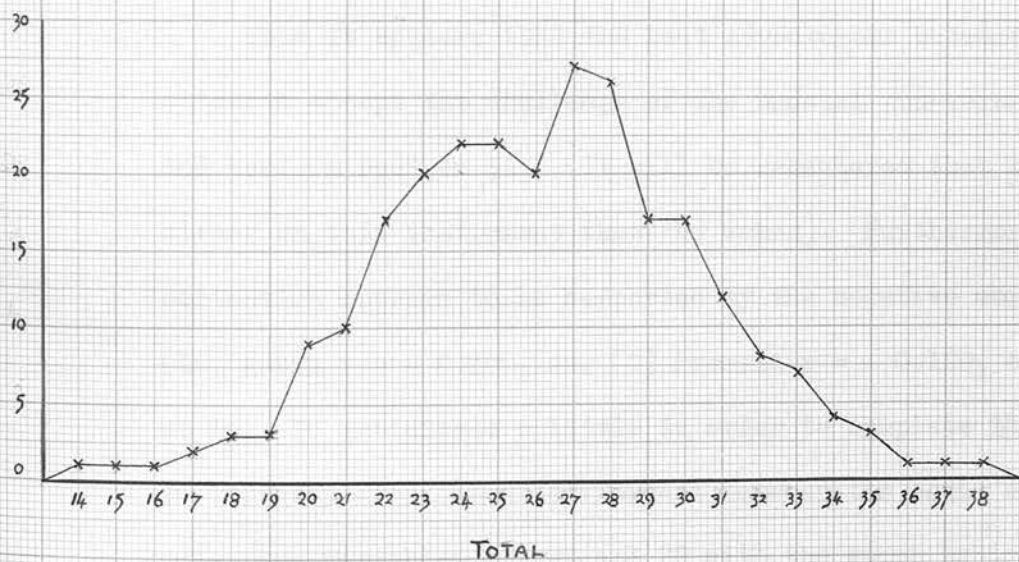
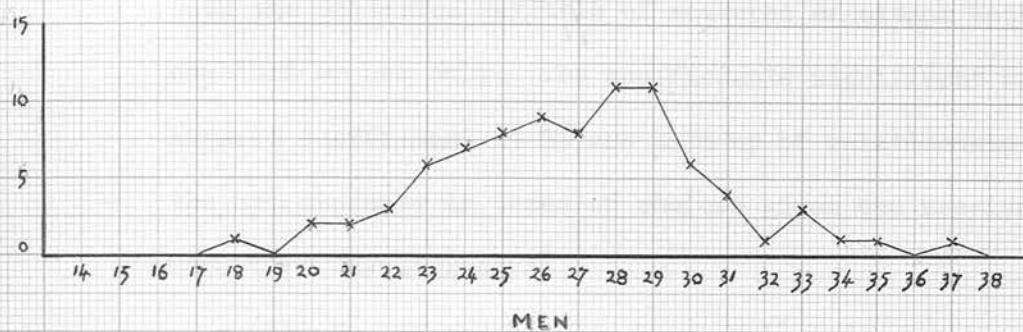
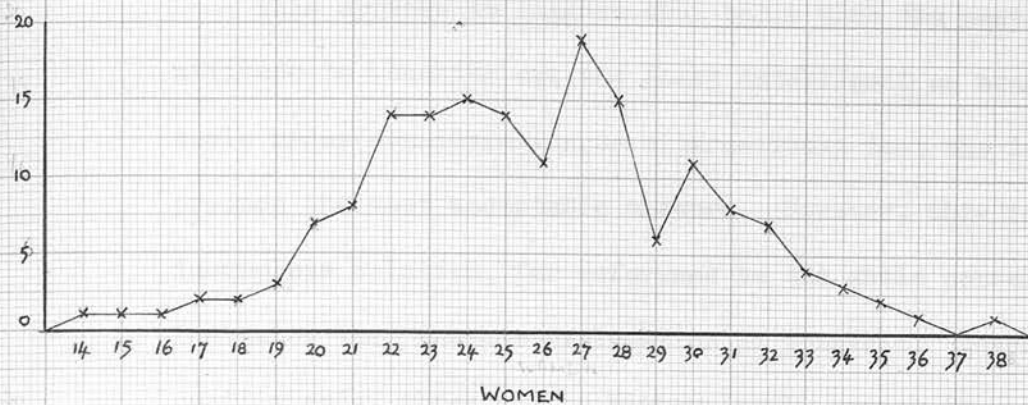
- | | |
|--|------------------------|
| (23) Cattell's Verbal Intelligence Scale 3 | $r = 0.262$ sig. at 1% |
| (2) Factor B | $r = 0.243$ " " " |

while the (24) Vocabulary items on the verbal scale are also significant at the same level of significance ($r = 0.183$).

In terms of the relationship with measures of performance, three of the academic measures are significantly related to the criterion measure:

- | | |
|-------------------------|------------------------|
| (88) Mathematics Year 2 | $r = 0.210$ sig. at 1% |
| (19) Education Year I | $r = 0.191$ sig. at 1% |
| (22) Mathematics Year I | $r = 0.180$ sig. at 1% |
| (20) English Year 2 | $r = 0.150$ sig. at 5% |

With regard to the measures of personality, the most surprising result comes from the correlation with two of the measures of teaching attitude when negative coefficients were produced (26) M.T.A.I. Pro



$$\bar{x} = 26.21 \quad \sigma = 4.13$$

scores ('Rights') $r = - 0.135$, and (28) M.T.A.I. Final Score $r = - 0.126$, both significant at 5%.

This appears to suggest that those with the most favourable attitude to teaching are the least intelligent as measured by the scale under consideration, or alternatively that the least intelligent produce the most acceptable answers. However, this is probably an incomplete solution, for reference to the whole correlational array indicates that another explanation is possible. Seven significant coefficients, three at the higher level, appear from the correlation with the criterion variable of measures of either both sexes combined or men only. The coefficients significant at 1%, and the highest coefficient at 5%, are made up of relationship measures with the men students in terms of choices given and received on the Social Structure Questionnaire:

(76)	No. of men by whom known well and known very well	$r = 0.173$ (1%)
(74)	" " " " " " "	$r = 0.173$ (1%)
(71)	" " " known well and known very well	$r = 0.164$ (1%)
(65)	" " " " "	$r = 0.158$ (5%)

Thus it appears that the most adventurous outward - going students accept the challenge of the unusual non-verbal instrument and perform best on it. (It will be remembered that the men scored higher on this instrument than the women). Furthermore, the above contention appears to be supported by the negative correlations with (10) Autia $r = - 0.200$, and (8) Premsia $r = - 0.180$, both significant at 1%. To anticipate a little in order to complete the argument, there is a highly significant difference between the sexes on the three M.T.A.I. measures, variables 26, 27 and 28 with the women having the more favourable attitude in each case.

Therefore, it appears that the measure of non-verbal intelligence is related to student performance in theoretical subjects but not to practical teaching, while the negative relationship with attitude to this

activity is a by product, from a sex difference in personality, along the lines indicated.

There is insufficient evidence to support the initial general hypothesis although there is a tendency in the stated direction.

Variable 55. Age in Months

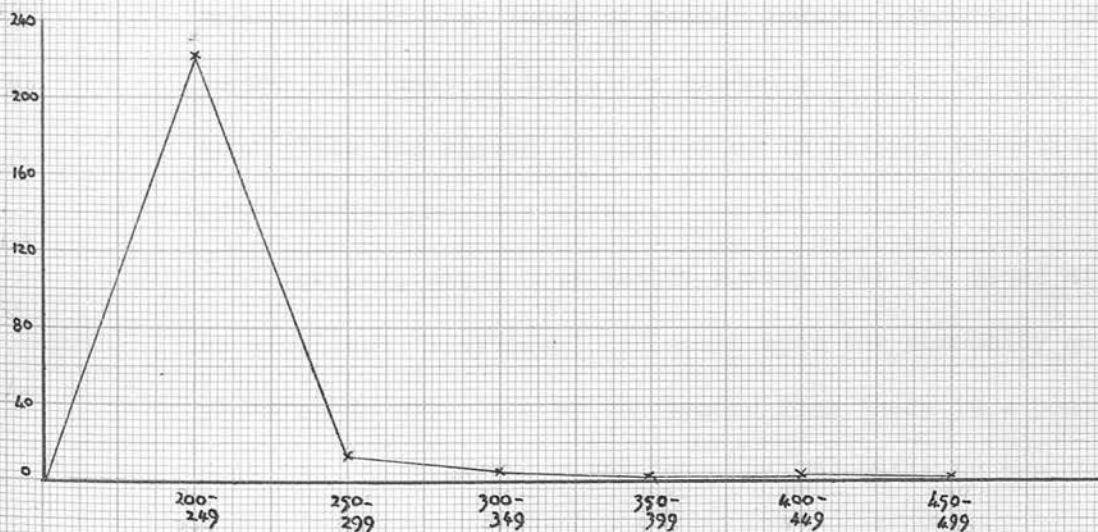
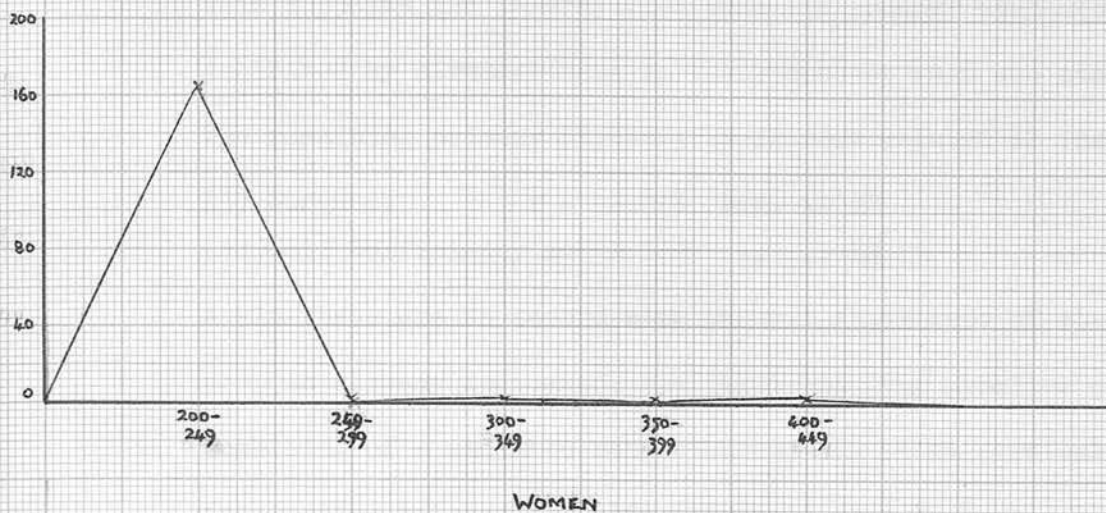
Like socio-economic status this is not a variable to test a specifically stated hypothesis, as the examination of what often appears as a constant in researches in education and psychology, and it seems reasonable to assume that age may have certain advantages in certain performance situations.

The same qualification made for the previously discussed variable must needs be entered for the present age variable, in that the majority were just over the age of eighteen entering upon the course (the measure was checked against student responses in the second year as some of the records were incomplete at the time), while a small minority only were appreciably older. The average age for the men was found to be 20.008 and that of the women 19.054 which represents a difference significant at the 1% level, $t = 2.881$. This is largely explained by the women having superior entry qualifications on initial application whilst the men, not infrequently, have to wait a year to obtain the necessary subjects for admittance.

With regard to the extent to which the older students become absorbed into the group it is interesting to note, that whereas negative coefficients are formed in relation to the measures of females known well and known very well, by whom known well, as well as of these measures with combined groups, with r 's ranging from (72) -0.213 to (67) -0.122, positive correlations occur in relation to two measures of status amongst men (76) and (74) with $r = 0.150$ and 0.148 (both sig. at 5%). The suggestion, therefore, is that the men appear to be less seclusionist than the women, possibly because they include a larger proportion of older students and are also smaller and an older group generally.

The most striking difference in personality patterns appears in relation to the correlations with introversion-extraversion :

(39) Eysenck's Extraversion	$r = -0.172$ sig. at 1%
(19) Cattell's Introversion	$r = 0.154$,, ,, 5%



$$\bar{x} = 232.47 \quad \sigma = 28.56$$

This supports the general view that the younger students are less inhibited by circumstances in their conduct than are older students.

The remaining primary personality factors related to the criterion are:

(5) Surgency $r = -0.225$ Sig. at 1%

(14) Self Sufficiency $r = 0.144$,, ,, 5%

Again these are in accord with general experience of students.

As already indicated, the first teaching practice comes as something of a shock to many students and it is particularly interesting to see that older students tend to have a high level of aspiration with regard to the practice and to judge their performance on it as successful :

(43) Estimate of 1st Teaching Grade Pre.1st Prac. $r = 0.132$ sig. at 5%

(45) ,, ,, ,, ,, ,, Post ,, ,, $r = 0.127$,, ,, ,,

But the actual correlation with the teaching practice grade was negative with (19) $r = -0.123$ sig. at 5%. Presumably, the older students tend to assess the situation in relation to their own school experiences which, being more remote, tend to be more out of date with modern trends than those of rather younger students. It is also true to say that most of the older students tend to be drawn from the local area, while the spread of innovation in primary education is penetrating only slowly into this area.

However, since most tutors agreed that the older students provided an excellent 'leavening' influence upon the community generally, it is pleasing to note that by the second year there is a positive correlation with (87) English $r = 0.126$ (sig. at 5%) while by the third year both Final teaching and Education correlate well with the age variable :

(91) Teaching Grade Year 3. $r = 0.137$ sig. at 5%

(90) Education Theory Year 3 $r = 0.173$ sig. at 1%

Thus the minor hypothesis that greater age is an advantage in students' performance is supported both in theory work and as regards teaching.

Variable 25. Socio-Economic Status

An attempt was made to consider the socio-economic status of the student body in relation to performance and personality. A considerable and increasing body of research suggests that a child's life chances may be considerably influenced by the kind of home he comes from, the quality of the language spoken and so on. This investigation was not designed to consider such questions and the sample is not suitable for such investigation as it only includes those who have succeeded in going on to higher education. At the same time, and for this very reason as well as to consider the influence, if any, of this variable on the other factors, an attempt was made to obtain a measure of socio-economic status of the students' homes.

With regard to the choice of the criterion measure, the whole question of the relation between income and social class and the use of the Registrar General's grouping of occupations into the five social classes is discussed in detail in Marsh (1965) P.195-207. The grouping used in the present investigation followed the following pattern using the revised 1961 categories :

Class 1 Professional and similar occupations.

,, 2 Intermediate occupations.

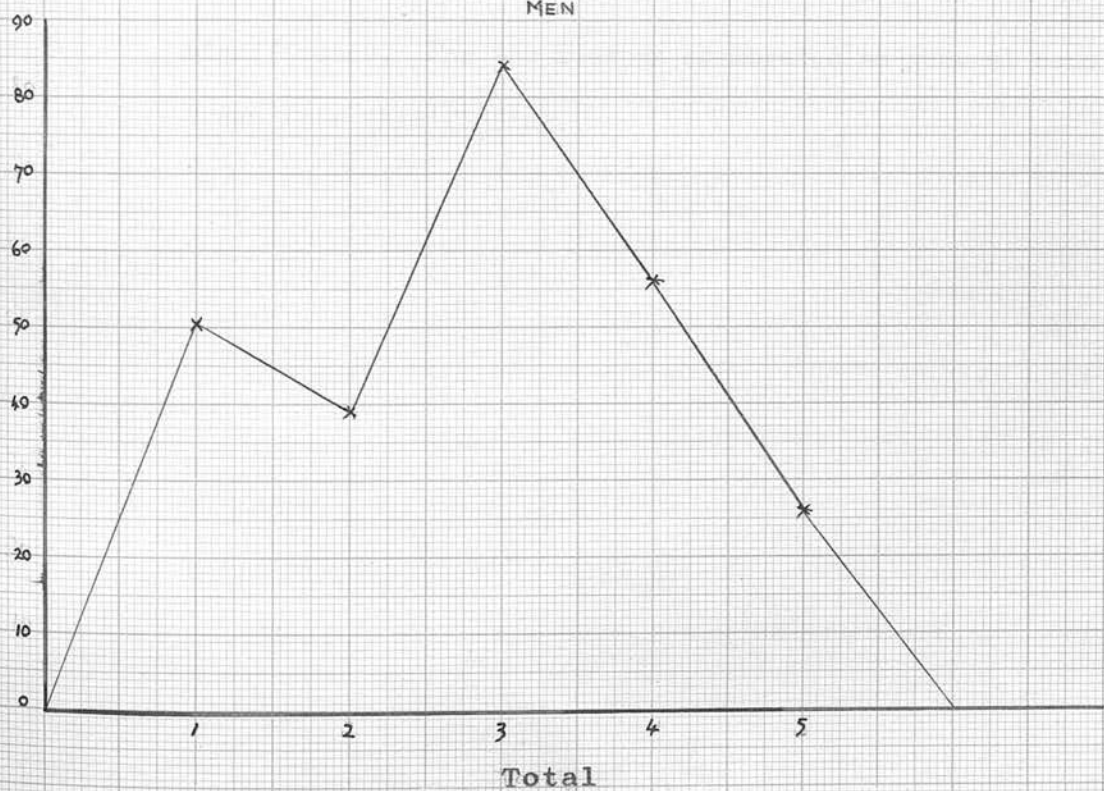
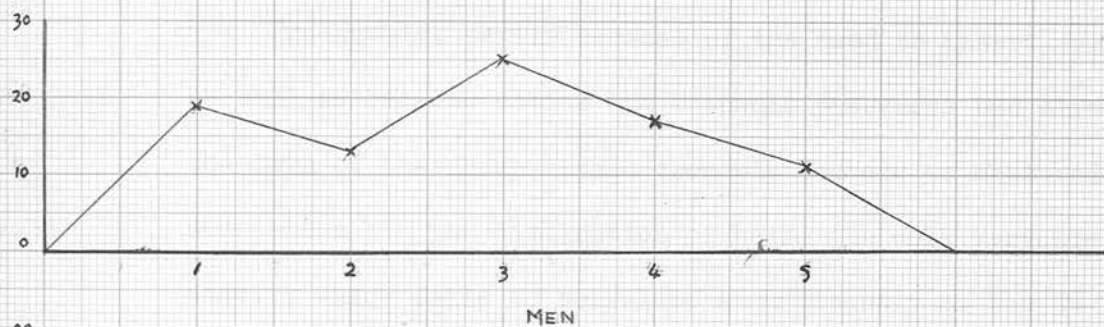
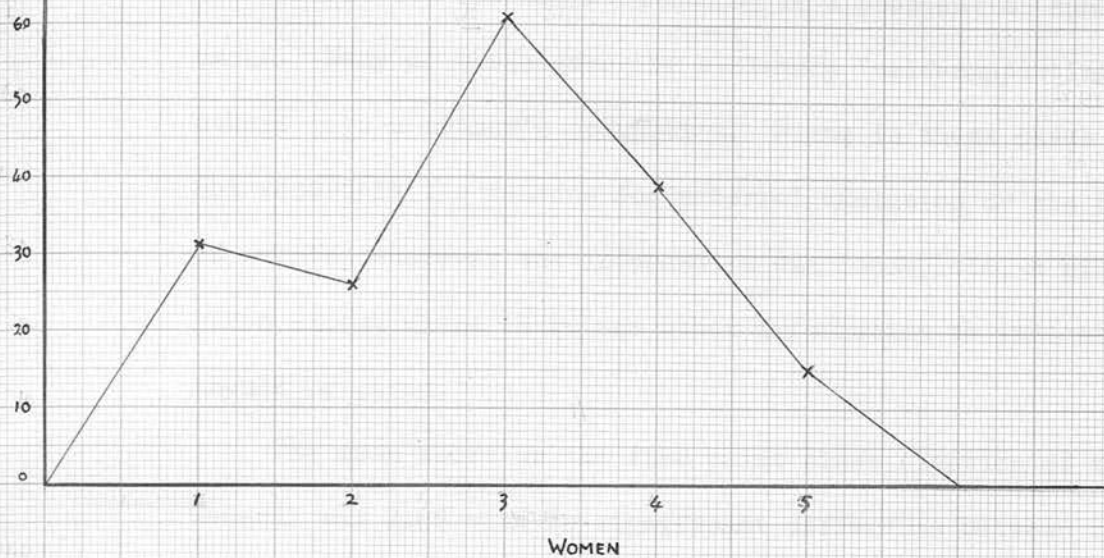
,, 3 Skilled occupations.

,, 4 Partly-skilled occupations.

,, 5 Unskilled.

For the analysis these were scored in the reverse order.

A question was included in a College Reaction Questionnaire asking for Parent's occupation. A considerable number of students did not give an answer. The question had been asked on the college application forms, but investigation had revealed that many of these were also blank. In the event it was decided that it would run the risk of interfering with the researcher's relations with the students if he were to press the enquiry personally and so an approach was made to the college registrar. This official kindly arranged to send an



$$\bar{x} = 2.88$$

$$\sigma = 1.25$$

official letter requesting the information required in order to complete the college records.

Unfortunately, although most students complied in replying, the information was not forthcoming in a substantial number of cases. Many of these gave the statement "self-supporting" while others gave a mother's occupation. Since in these cases one could not ascertain the reasons for paternal exclusion or the time sequence of events, wherever the information was incomplete, a mid score was given, except where there was other information to indicate that another should be given.

The mean score on the five point classification of the Registrar General was 2.88 with no significant difference between the means of the sexes, (men $x = 2.859$; female $y = 2.888$).

Presumably, partly because of the need to insert dummy scores as well as because social and economic pressures had already shaped the form of the group, socio-economic factors as measured by father's occupation has the distinction of being the only variable in this enquiry which fails to correlate significantly at the 5% level of significance. For the reasons adumbrated no general conclusions are drawn from this finding.

Variable 58. Language

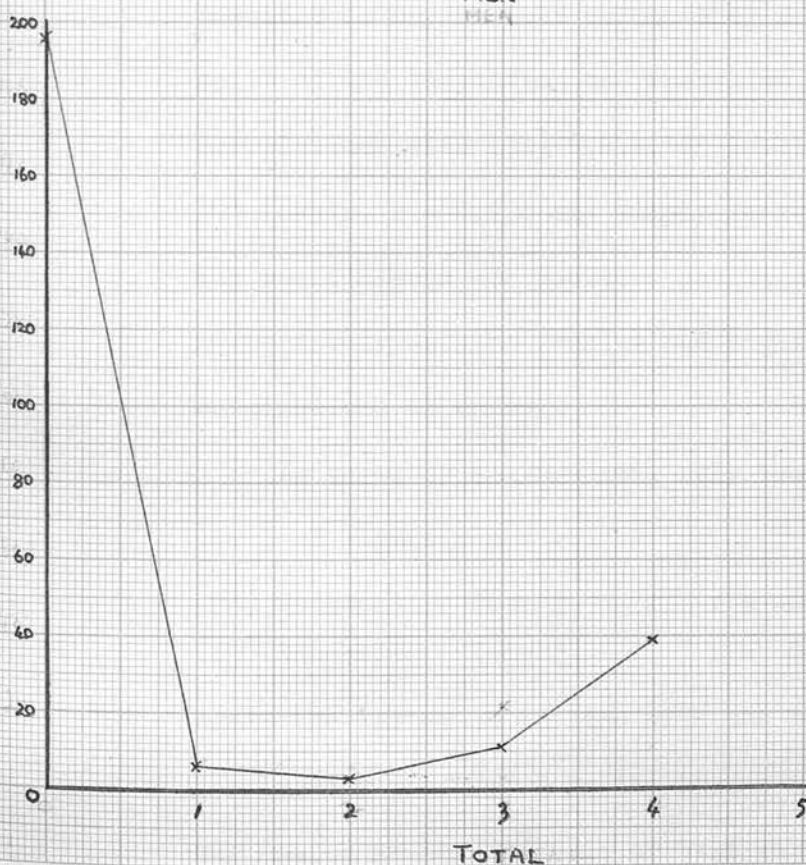
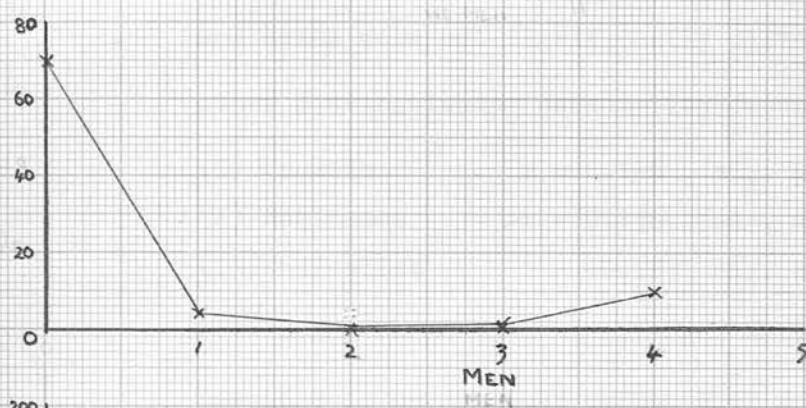
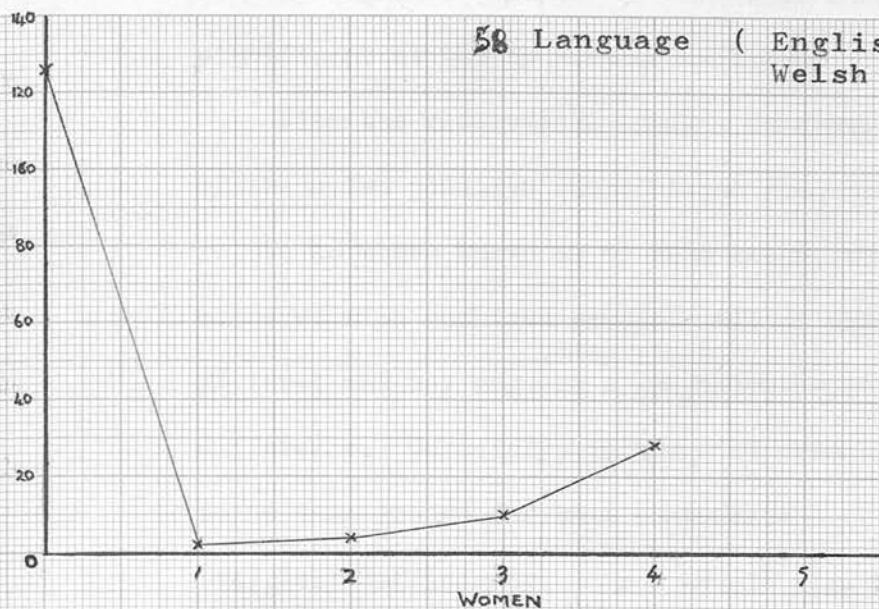
Language is an additional constant which sometimes requires attention in a mixed language situation in addition to the more commonly recognized constants. This variable is included for this reason.

The comments about the need for caution in accepting abnormal distribution of scores has particular relevance in connection with this variable. It may be remembered that the students were graded by the tutors in the Welsh department who dealt with all students in Welsh Studies - a course in English on aspects of Welsh culture, in Bilingualism, as well as lecturing in Welsh.

The students were classified into five groups, from those with a perfectly fluent understanding of Welsh, scored 4, to those with no knowledge of the language. The resulting distribution shows a large majority with no knowledge of Welsh and a small group with much knowledge and even smaller numbers occupying the intermediate positions.

It is no disrespect to my former colleagues to say that this pattern may not be entirely correct, for many students sought to give the impression that they had no knowledge of Welsh for fear that they would "be letting themselves in for something." That is to say many who had some understanding feared that they might be taught through the medium of a language in which they did not feel themselves sufficiently confident or competent to achieve their best. It was found, for example, when the writer lectured in Welsh to a large class on Bilingualism in Welsh Education that it was necessary to give a synopsis in English at intervals for the benefit of some of the students. Conversely it may well be true that some students classified under 0 should probably be entered under 1, 2 or even 3, but since accurate information is not available no attempt has been made to alter the position as received.

The main difference is that 28 women as compared with 10 men are in the fluent Welsh group and overall this produces a female mean



$$\bar{x} = 0.77 \quad \sigma = 1.52$$

of 0.906 against the male one of 0.506 which produces a difference significant at the 5% level, $t = 2.122$.

With the reservation already entered, it may be seen that seven of the twelve positive correlations from the social structure instrument relate to women known or by whom known, the others being for similar measures with combined groups. All of these, are significant at the 1% level and may suggest a gregarious quality beyond a simple sex difference. Certainly, in terms of personality variable there appears to be some ground for this contention :

(14) Self Sufficiency $r = -0.316$ sig. at 5%

and sexes were not significantly different on this variable. The other distinguishing personality factors were as follows :

(8) Premsia $r = 0.196$ sig. at 1%

(4) Dominance $r = 0.176$ sig. at 1%

(13) Radicalism $r = -0.123$ sig. at 5%

Since there is a significant sex difference on each, it is not possible to say whether or not they reflect cultural differences, in spite of the temptation to generalize. So too, the positive correlations with (34) G.C.E. 'A' levels, $r = 0.164$ and (33) G.C.E. 'O' levels, $r = 0.128$ may simply represent the sex difference i.e. the coefficients are positive and significant at the 1% and 5% levels respectively, and the females had significantly higher scores on these examinations at entry.

In terms of performance, only two theory measures reach the lower level of significance :

(88) Mathematics Year 2 $r = -0.156$ sig. at 5%

(89) Education Year 2 $r = 0.121$,, ,, ,,

Again the latter is in line with the sex difference but not the former.

Having due regard to the nature of the distribution, the suggestion in the analysis of this variable is that the monoglot, rather than the bilingual, has a tendency towards greater independence of thought, feeling and conduct.

Variable 33 and 34 G.C.E. results

These two variables are used to test the hypothesis relating to past academic performance which suggests that this is an inferior form of prediction to that based on other assessments.

The regulations for entry to the College of Education lay down that the normal entry requirement is for a minimum of five passes at ordinary level. At the same time advanced level passes may be counted in lieu of these and in very exceptional circumstances an occasional student may be admitted without the generally accepted minimum number of subjects. There appears to have been a general tendency in recent years for there to be a considerable imbalance in the academic, if not general capabilities, of male and female applicants for training college places, with the females having the advantage. Whether this is a general trend is unknown, but that it continues in the S. Wales area was confirmed by discussions with heads of other education departments at a recent University of Wales Board of Studies.

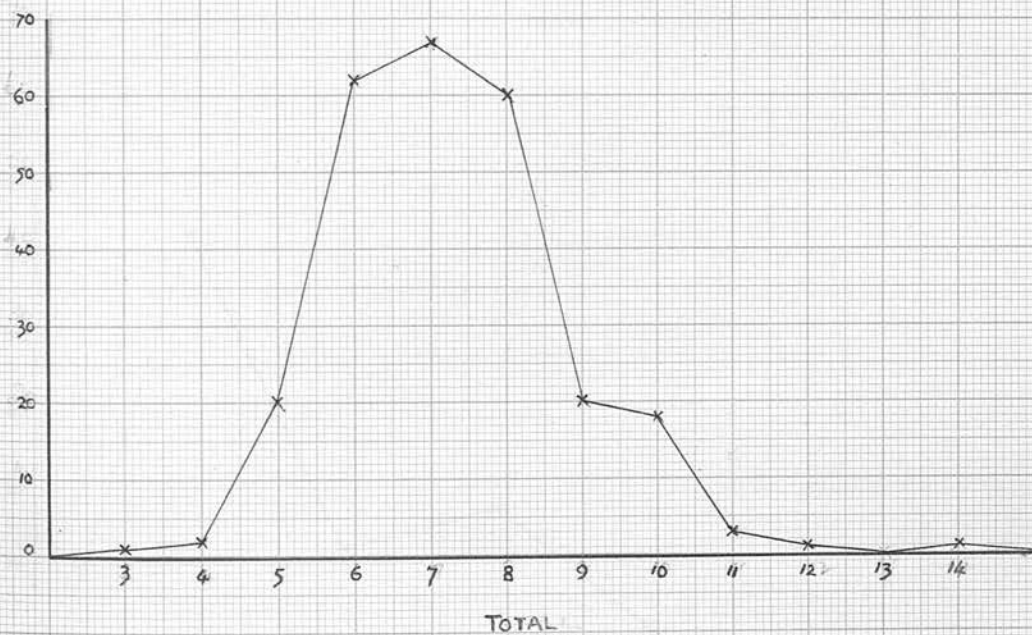
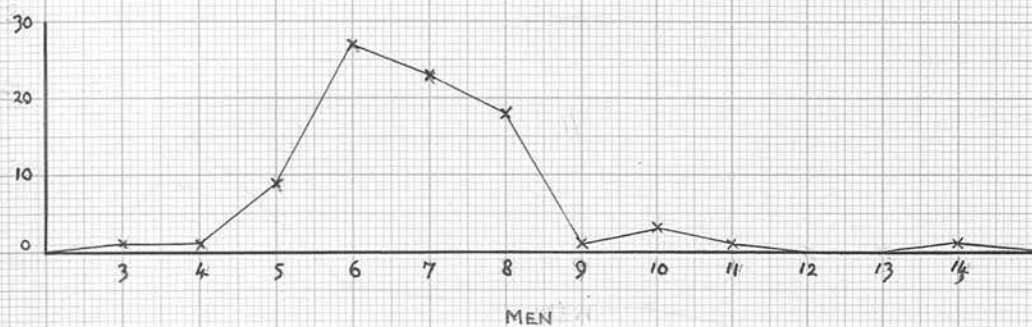
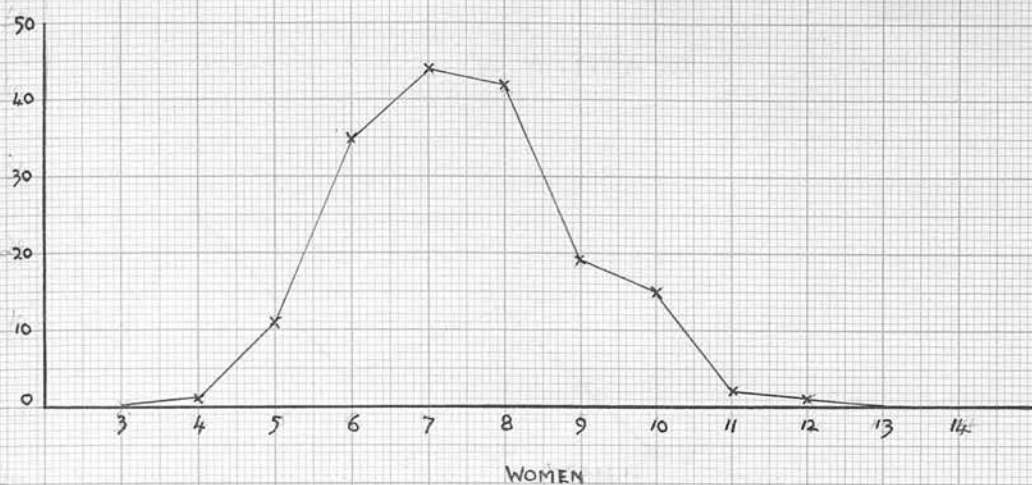
This survey confirms the general impression with regard to the entry qualifications of those accepted:

	Men	Women	t	sig.
(33) 'O' Levels	6.859	7.459	2.976	1%
(34) 'A' Levels	0.706	1.041	2.429	5%

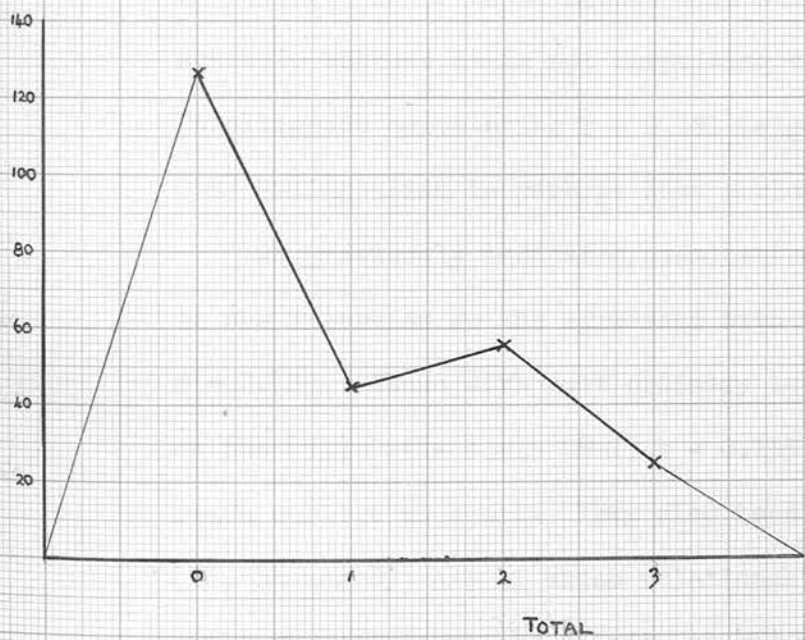
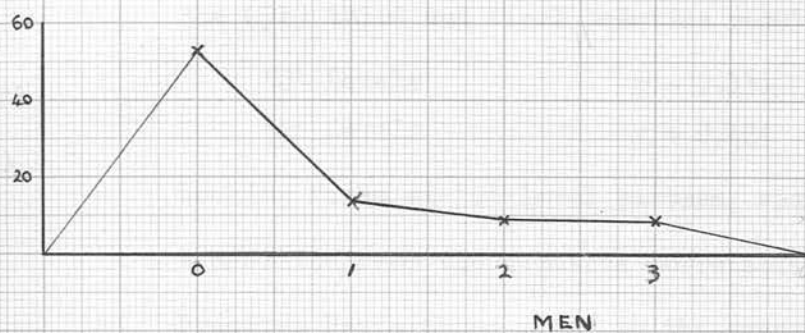
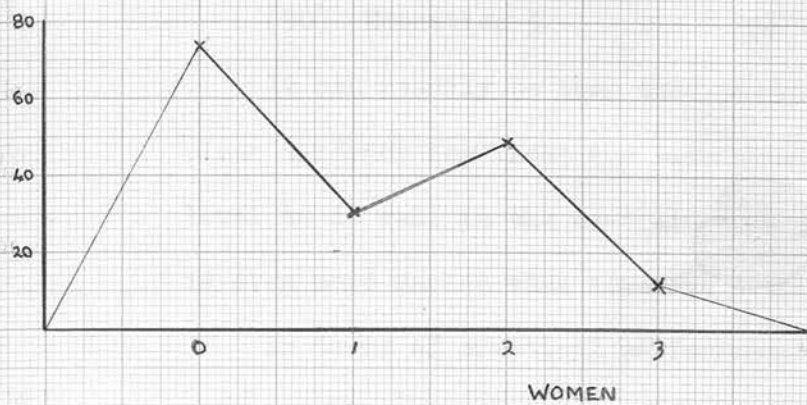
Since the entry requirement does not insist that the passes be on the same occasion but accepts the total number, the same criterion was taken for the investigation.

With regard to academic performance both the ordinary and advanced level results were found to be significantly positively associated with such performance as follows:

	<u>G.C.E. 'O' Levels</u>	<u>G.C.E. 'A' Levels</u>
(19) Education I	r = 0.293 : 1%	r = 0.336 : 1%
(20) English I	N.S.	r = 0.308 : 1%
(22) Maths. I	r = 0.122 : 5%	N.S.
(89) Education 2	r = 0.188 : 1%	r = 0.218 : 1%



$$\bar{x} = 7.26 \quad \sigma = 1.5$$



$$\bar{x} = 0.93 \quad \sigma = 1.06$$

(87) English 2	N.S.	$r = 0.282 : 1\%$
(88) Maths 2	$r = 0.160 : 5\%$	N.S.
(90) Education 3	$r = 0.146 : 5\%$	$r = 0.170 : 1\%$

It can readily be seen that, amongst a selected group there is a clear tendency for those who have obtained most passes at ordinary level to do well in the academic work generally and, that this trend is even more marked when advanced level performance is considered.

In terms of practical performances, neither the first nor second year results are related to the criteria at a significant level, but the (91) third and final practice results do reach this level:

'O' Levels	$r = 0.131$ sig. at 5%
'A' Levels	$r = 0.124$ sig. at 5%

Looking first at 'O' level pattern, what is interesting is to see the transition, from the negative correlation in estimating (43) First year Practice Performance prior to the event, $r = -0.166$ (sig. at 1%), to the positive one when the (44) judgement was made after the event, $r = 0.129$. Since intelligence evidently plays a considerable part in academic success it is not surprising to find (23) Cattell's Verbal Intelligence correlating $r = 0.181$ (sig. at 1%), but the relation with (58) Bilingualism is perhaps less obvious, $r = 0.128$ (sig. at 5%).

As previously indicated, examination passes tend to be considered in the interview so the agreement with this measure (35) is reasonable $r = 0.125$. Those with most ordinary levels also tend to be more mature on the (51) Pitts scale ($M-1$) $r = 0.135$ (sig. at 5%) by the time they reach college at least. They also tend to claim to know more females (72, 66 and 69) all of which relationships correlate at the 1% level while the sole negative r (sig. at 5%) is with (76) the men by whom known and known well.

The Advanced level results follow the same pattern although generally at a higher level of significance e.g. Pitts Maturity Scales (52) $\frac{M}{m+1}$ $r = 0.273$ and (51) $M-1$, $r = 0.247$, and also (58) Bilingualism $r = 0.164$ all significant at 1%.

An addition to the pattern is the (28) M.T.A.I. Final score pattern $r = 0.161$ (sig. at 1%) and (26) the Pro score pattern $r = 0.156$ (sig. at 5%) while (10) Autia also correlates $r = 0.179$ (sig. at 1%) presumably indicative of an 'academic bent'. Students with advanced level passes also tend to have (60) a lower estimate of their own difficulties $r = -0.141$ (sig. at 5%), whilst also tending to judge their own performances in a poor light (45) $r = -0.125$ (sig. at 5%).

Again there are no positive correlations with scores on the range of acquaintance measures but eight negative ones occur at a level of significance beyond 5% (three beyond 1%), suggesting clearly that those with the best entry qualifications tend to know less students generally, and certainly less males in their year group. Since the students with the most Advanced level passes also achieve most in college it lends a measure of support for the view that the most successful academically tend to be less socially active, but the position should not be exaggerated both because of the nature of the distribution of the scores on the G.C.E. results and of the observed sex difference.

With these provisos, the hypothesis that G.C.E. results can be surpassed as predictors of subsequent student performance is supported, although such predictors as succeed in this, operate after admission to College courses.

Variable 35 The Interview

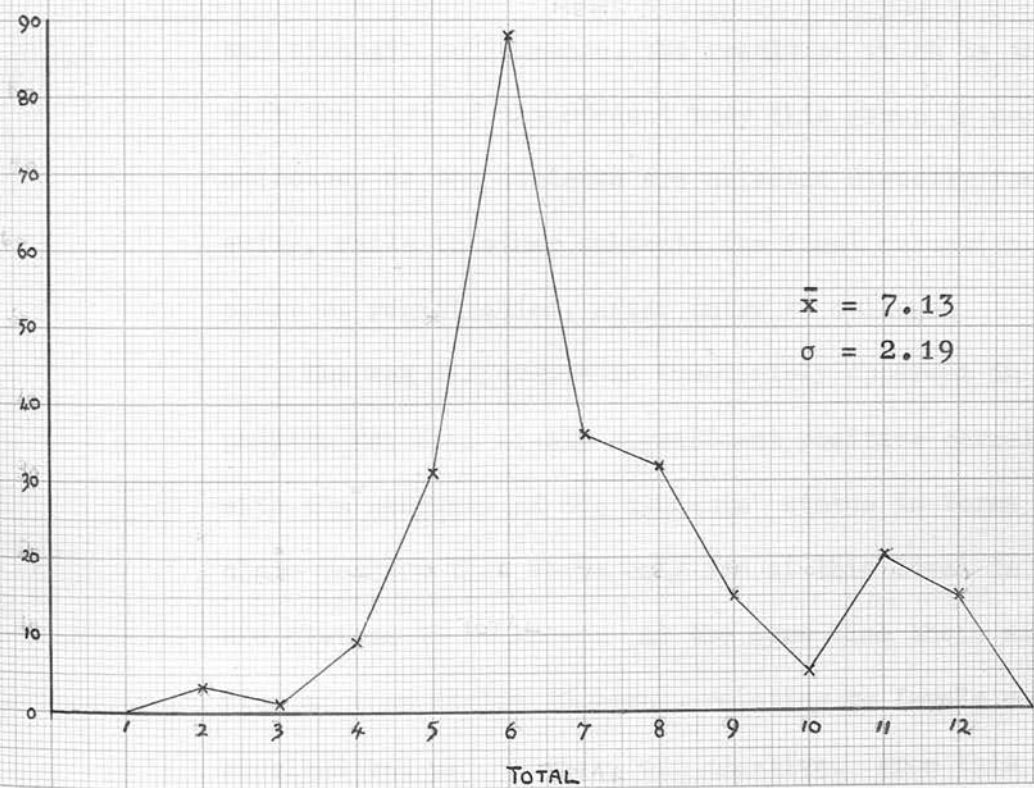
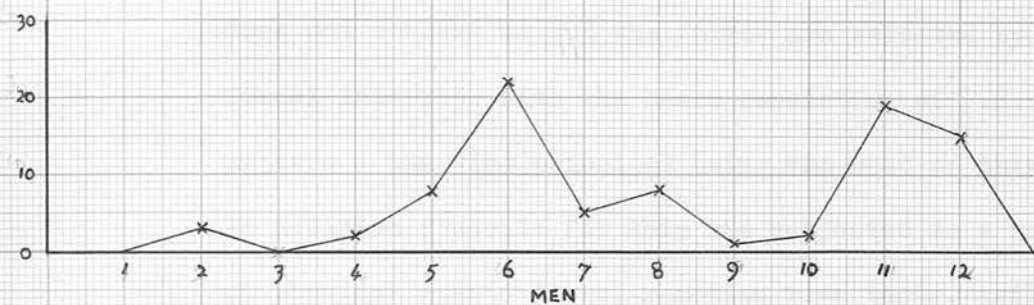
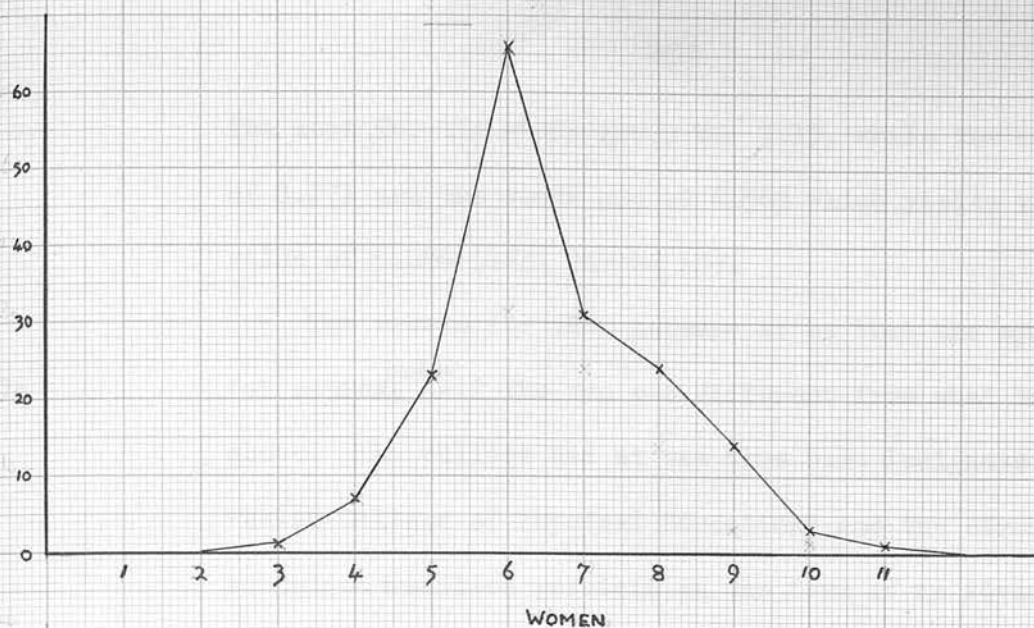
The means of selection employed by Cardiff Training College, as it was in 1963, was based on the recommendation of interview reports which were then scrutinized by the Principal. The specific hypothesis examined by this predictor variable indicates that performance may be reasonably forecast at the interview stage but less effectively than by other means.

The interviews were carried out by the panels of two members consisting of the Principal or vice principal and a colleague, or of heads of departments and a senior lecturer.

An interview report form was available which gave a general pattern of enquiry but the situation tended to be lightly rather than highly structured. There was planning to the extent that one member of staff tended to follow the report form, while the second was at liberty to ask more general questions noting the responses on a sheet of plain paper. The sessions lasted approximately twenty minutes and the completed form and comments were then scrutinized by the Principal who made the decision whether to accept or reject the applicant.

Since this is not a study of the interview in terms of its reliability or validity as such on the lines of Burroughs PhD. study, it must suffice to report the findings for those accepted into the college on the basis of the interview, and to see what personality and other qualities were related to success at the interview stage and also whether the ratings obtained then were related to subsequent student performance.

Applicants were awarded ratings on the U.W. scale ranging A to E with the addition of pluses and minuses yielding a range 0 - 12. Theoretically, therefore, one would not expect to find any students below a score of 4 but one woman and three men are in this category.



The mean for the whole group was 7.13, while the men had a mean of 8.271 and the women one of 6.565 which yields the very high t value of 5.086 (sig. beyond 1%).

The reason for this appears to be that the system of selection for approximately half the men was different from what has been stated above. The college had at one time been designated as the future "Welsh College of Physical Education" and the strong male physical education tradition persists in the form of an Advanced Main Course as well as a 'Wing' course for experienced teachers. The latter does not concern us but the former are selected by means of the formal interview with the board consisting of P.E. department members - the vice principal being the head of this department. In addition students for this are subjected to a rigorous series of physical examinations, reaction time tests, agility, flexibility and strength performance, the result of which is that in comparison with the rest of the student body this group is more highly selected, as the students are selected directly for this course at entry, while in other subjects the final selection of subjects takes place at registration, after entry to college.

The sex difference is immediately apparent in the correlational pattern for four highly significant positive correlations are formed with the measures of the students' status in terms of those males who claim to know them while only one at this level is with males who are claimed to be known. At the same time there are six coefficients, five of them at the 1% level, relating to female choices given and received but all of these are negative. From this it appears that the qualities which impress the interviewers also impress other members of the interviewee's sex group.

The negative correlation with (10) Autia $r = - 0.170$ (sig. at 1%) is not altogether surprising nor that with (8) Premsia $r = - 0.253$ (sig. at 1%), but the negative correlation with (1)

Cyclothymia, $r = -0.155$, and with (52) Pitts E.M. Scale, $r = -0.125$, (both sig. at 5%) are unexpected in that one would have expected those showing a degree of sociableness and maturity to have impressed the interviewers favourably. Yet that the more introverted tended to be at an advantage is suggested by the correlation with (39) Eysenck's Extraversion $r = -0.194$ (sig. at 1%).

The personal qualities which impressed positively at the interview appear to have been only two in number (4) Dominance $r = -.220$ (sig. at 1%) and (13) Radicalism $r = 0.126$ (sig. at 5%) while the command of language which one might reasonably expect to have such a relationship was negatively related with the criterion viz. (24) Cattell's Language items $r = -0.142$ (sig. at 5%).

Those achieving most at the Interview stage tended to have a high level of aspiration in their estimates of their first, second and final practical teaching and theory grades. In the event they appear to be justified in their expectations for the interview correlates with both (61) Second year Practical Teaching $r = 0.190$ and (91) Third year (Final) Teaching $r = 0.224$, both at a significance beyond one per cent, and the relation with (90) Final Education is at this same level with $r = 0.219$. Thus, contrary to at least one hypothesis, the interview in the college does succeed in selecting those pupils who are ultimately indicated by the college as performing best in educational theory and practice.

Those who achieved the highest ratings at the interview did not appear to have significantly higher or lower difficulties generally, or to ascribe such difficulties to others. But, as they tended to judge their own performance relatively favourably after a teaching practice (e.g. (85) Judgement after Second

Practice $r = 0.127$; sig. at 5%) so there was a slight tendency for them to ascribe a higher (29) level of difficulty to others $r = 0.125$, and to rate their own lower (48) $r = 0.120$, both significant at 5%. In the event, their judgements of their performance tended to improve but on the first teaching practice they had the widest (64) Judgement Discrepancy (P-J) $r = 0.140$.

In general it appears that the interview does succeed in identifying those individuals who eventually will be rated highest in their final college performances, and has loadings on the personality factors indicated above, while the only other significantly important indicator, may represent 'contamination' as it features in the admission procedure, namely the number of G.C.E. 'O' levels obtained, which serves as a measure of past academic performance and correlates $r = 0.125$ with the interview criterion.

Using the contrasting criterion analysis the scores on all variables for the 10% rated highest and the 10% rated lowest on the interview were compared.

Those who were rated highest on the interview were monoglot (58) $t = 2.457$ (Sig. at 5%). They were not found to be significantly different on any of the performances or personality measures except ~~that~~ some of the rated highest tended to claim (69) to know few females well, $t = 3.201$, (sig. at 1%) or well and very well, (72) $t = 2.087$, sig. at 5%: In turn they enjoy a low status among women being known very well by few of them (78), $t = 2.500$ sig. at 5%. On the other hand those who impressed at the interview, also impressed their ^{fellow} men students most into rating them as being known by them well (74) and very well (75), with t values significant at the 5% level.

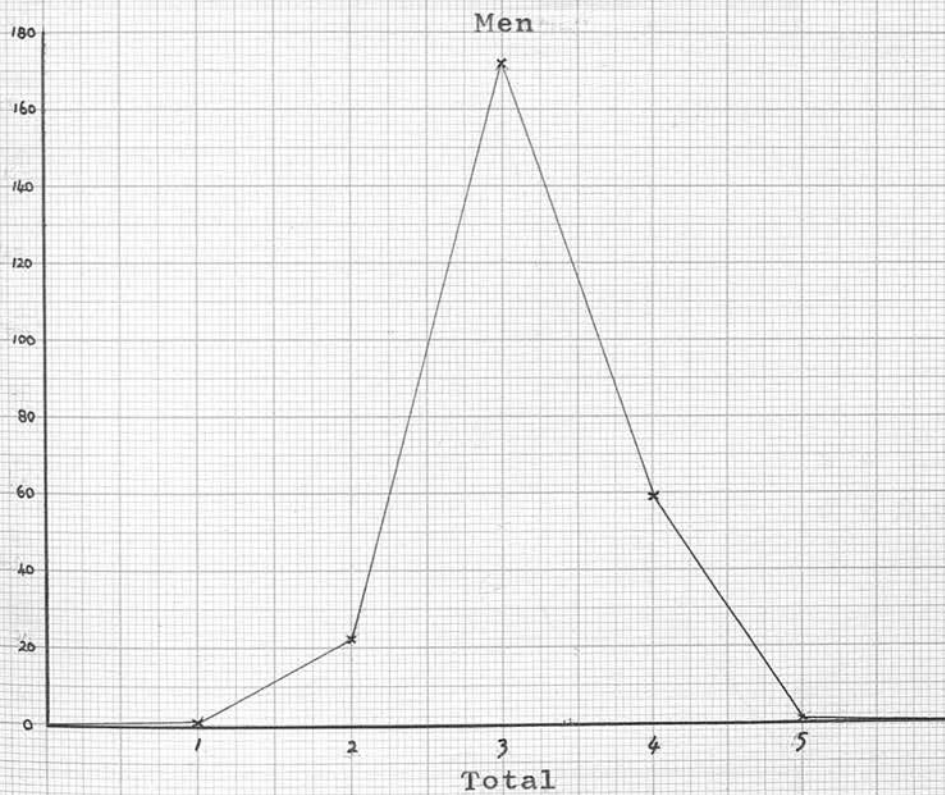
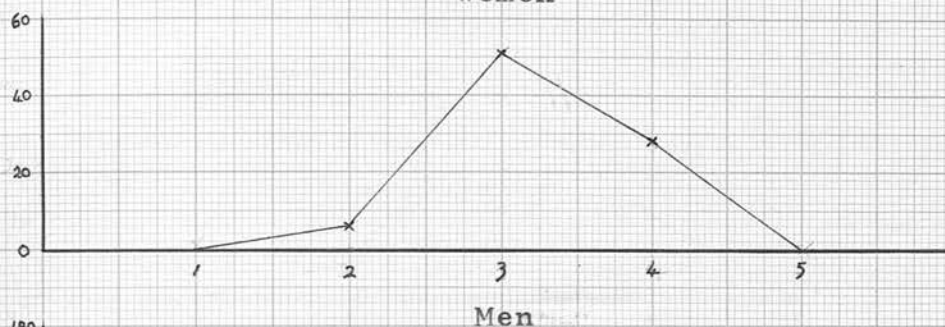
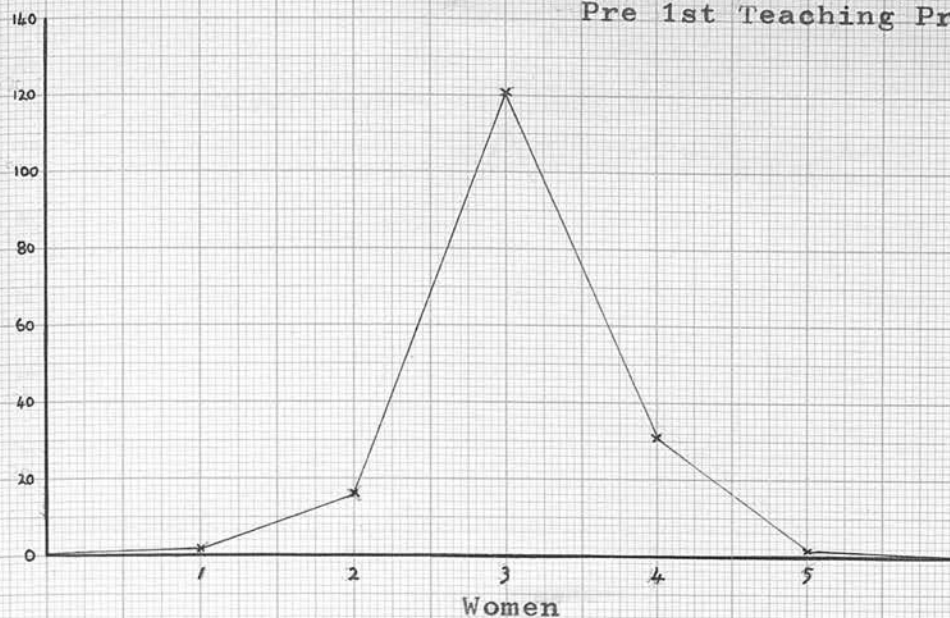
Specific Hypothesis of Performance

The specific hypothesis relating to the interview is supported by the information from the correlation analysis: there are highly significant correlations between the interview grades and students' subsequent performances, although the practical significance is more limited than the statistical significance would appear to suggest. There are also, as the hypothesis indicates, other variables which may forecast later performance more effectively, for example G.C.E. and student academic results in college.

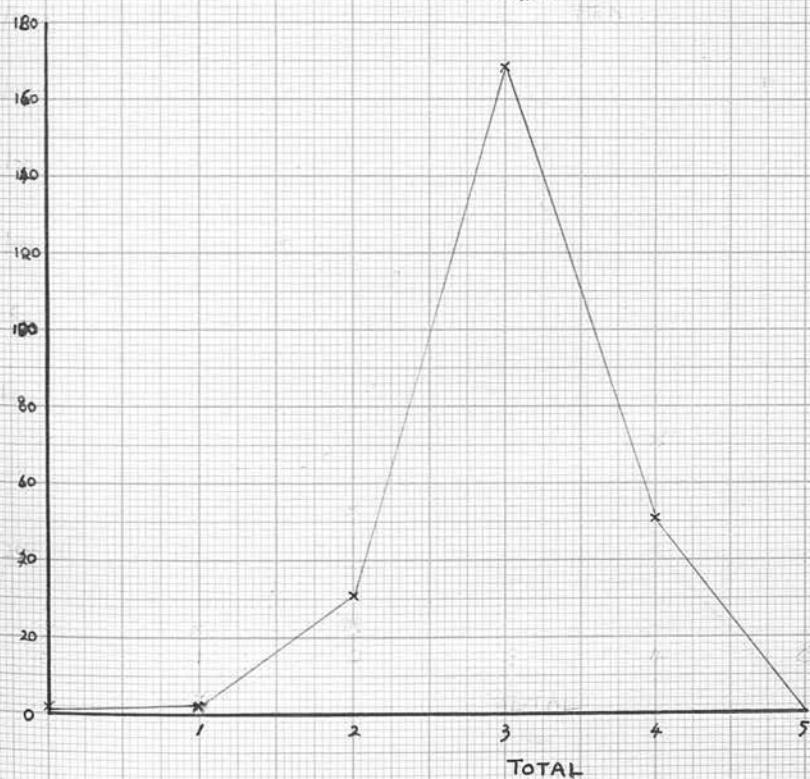
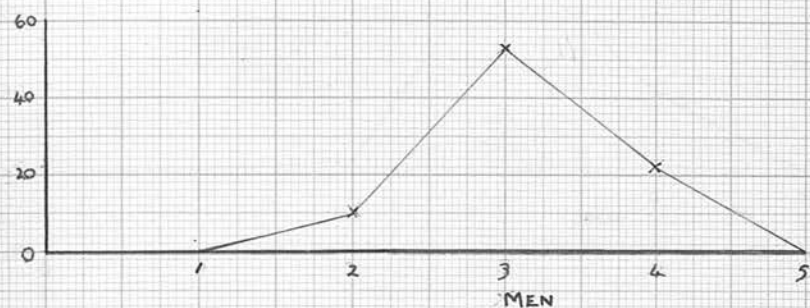
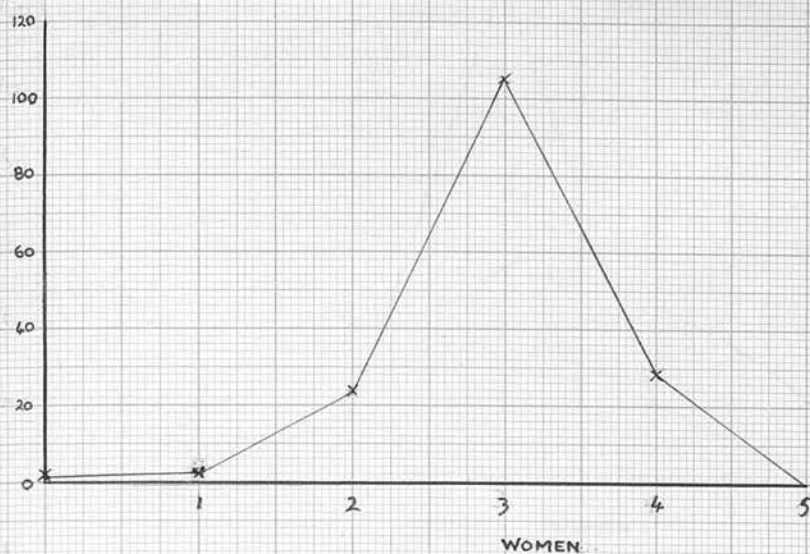
Self-Estimates of PerformanceVariables 41, 42, 43, 44, 45, 63, 64, 85 and 86

Over the years investigations in industry and the armed services have sometimes made use of students' self estimates. Although the idea is probably not new in education no documentation can be quoted to establish that the practice has a precedent in the realm of teacher training: certainly Eysenck uses it and reports its use in Personality investigation in an experimental context. It was decided to ask students to estimate how well they thought they would ultimately do in their work at the end of their course at certain critical points in their training, as well as how they thought they would perform in the short term, i.e. before teaching practice and after the event. It is not intended to refer to all the associations considered but to select some to support the main conclusions. These self-estimates test the first general hypothesis as well as the fourth, that self-estimates may be found to correlate with performances in theory and practice.

The two main points to be brought out are that the estimates given by the students arise out of the structure of the students' personalities and as such tend to be both consistent and accurate in relation to their estimates given at other times and to their actual performances. The main hypothesis is then supported in this connection for the estimate of the final theory performance during the first year in college is (90) $r = 0.213$ (sig. at 1%), while this estimate is correlated with the first year result (19) $r = 0.235$ at the same level of significance. Moreover, there was also agreement with academic performance generally both retrospectively, in terms of (34) G.C.E. 'A' level passes ($r = 0.147$: sig. at 5%) and in terms of aspiration, as in (87) Year 2 English ($r = 0.209$).

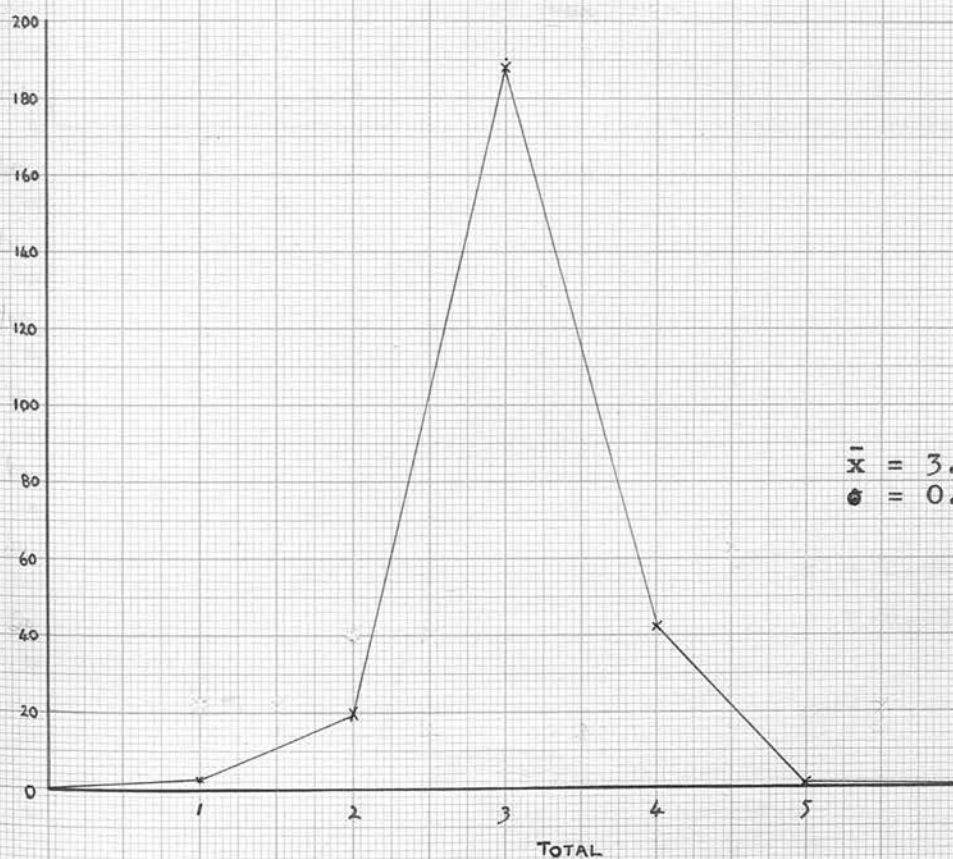
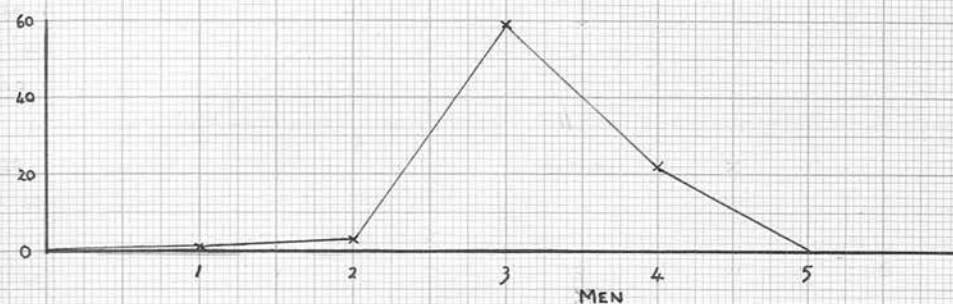
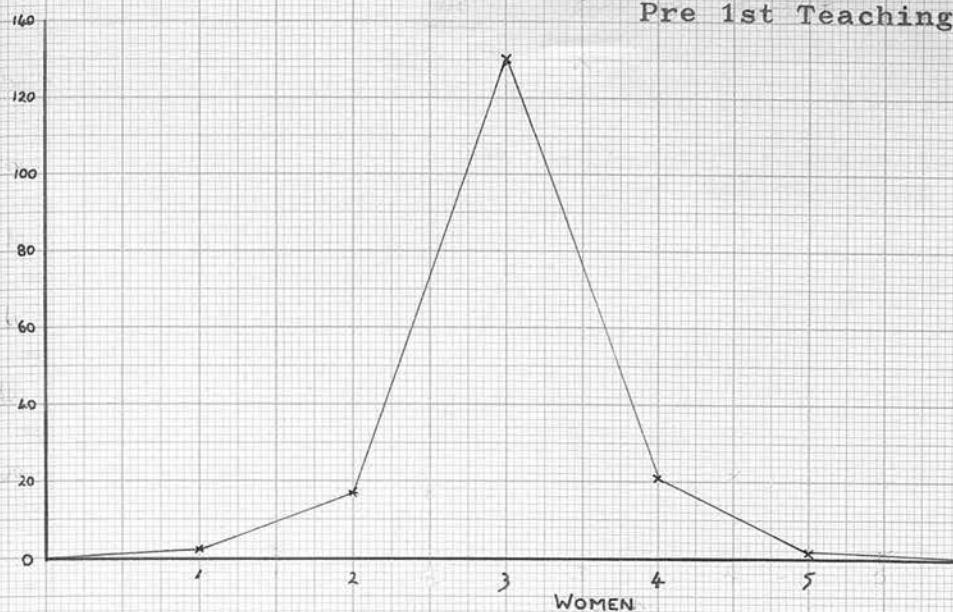


$\bar{x} = 3.15$ $\sigma = 0.57$



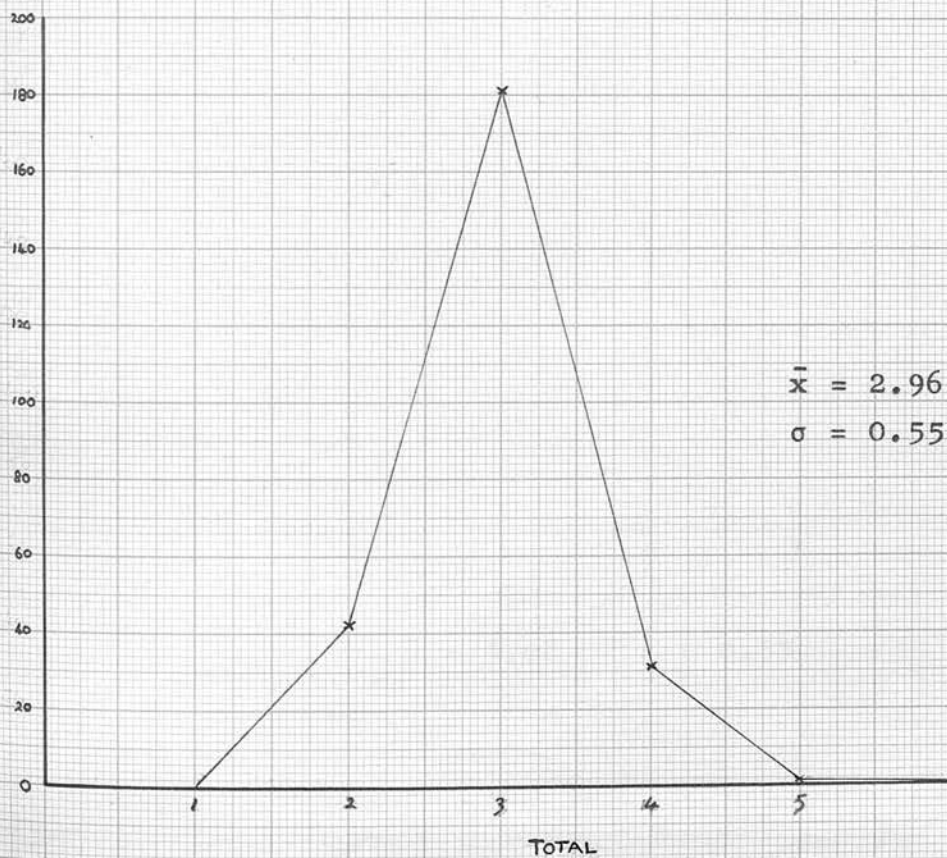
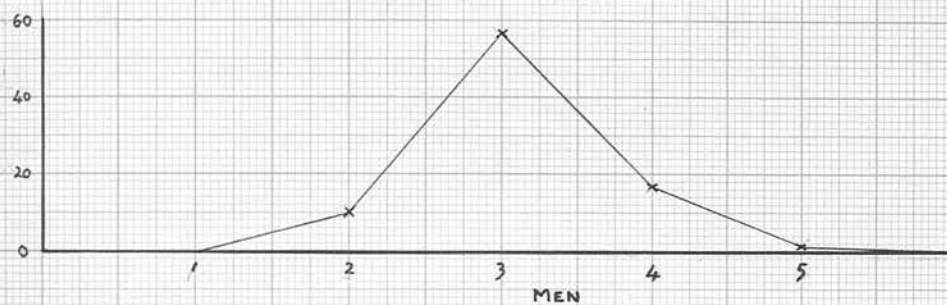
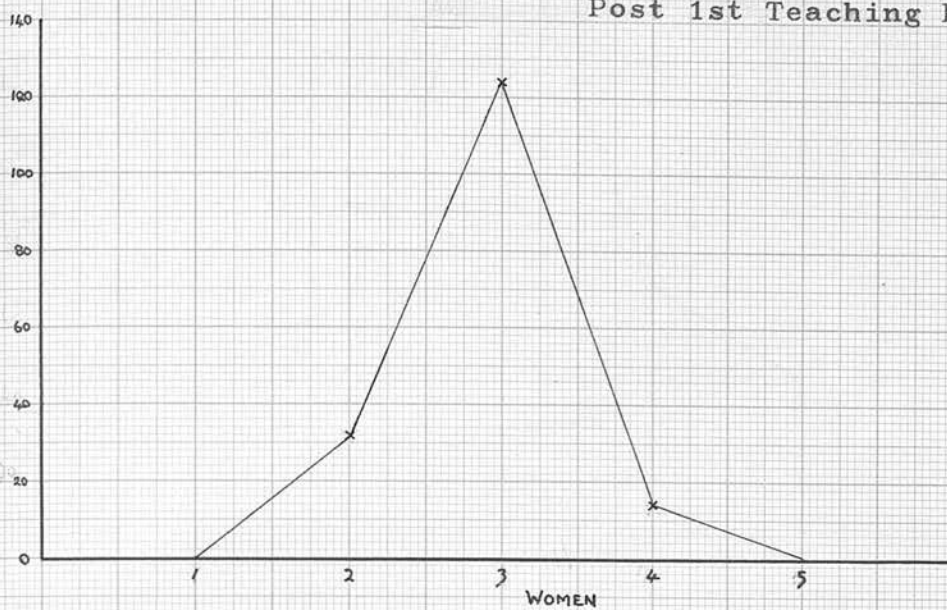
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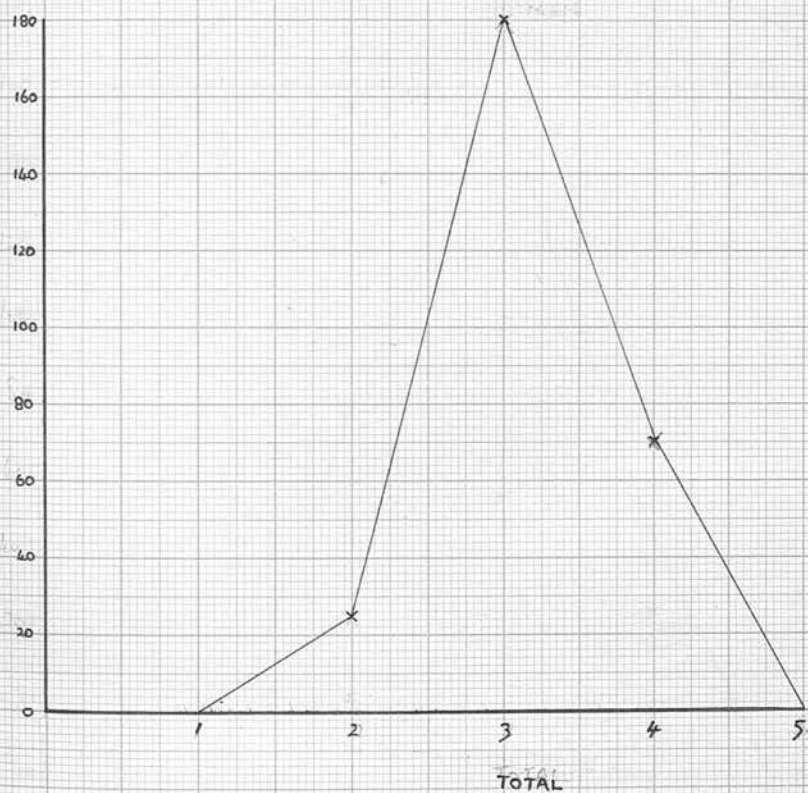
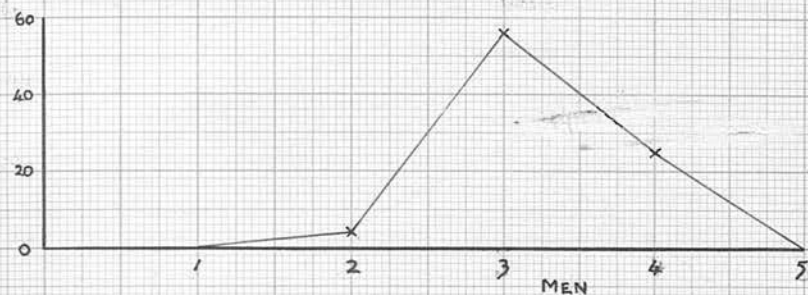
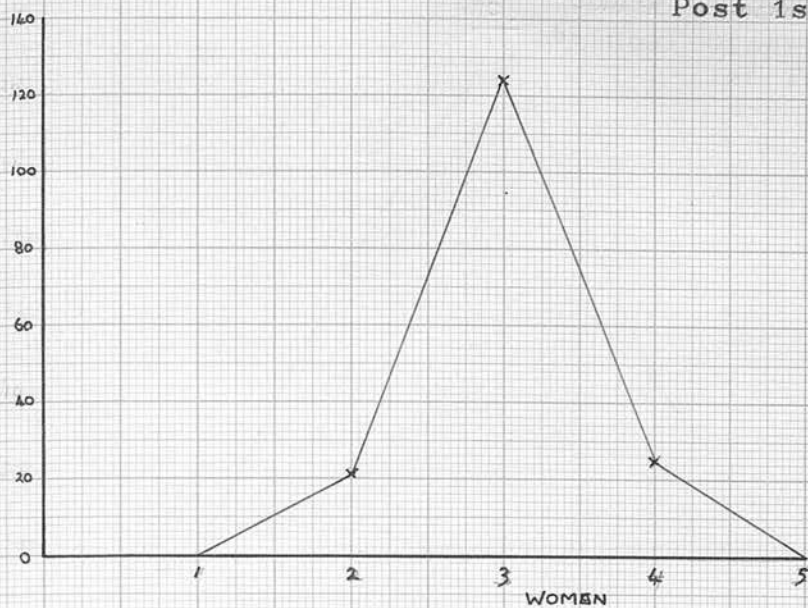
$$\sigma = 0.63$$



$$\bar{x} = 3.08$$

$$\sigma = 0.54$$

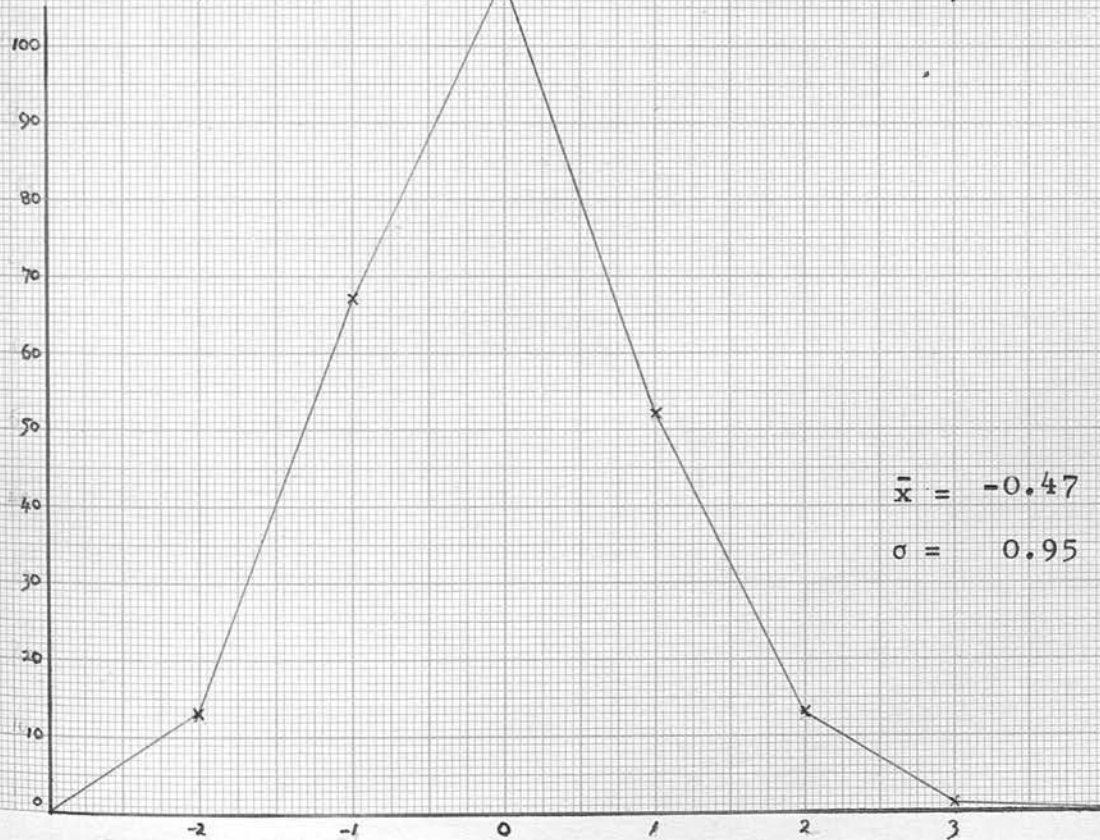
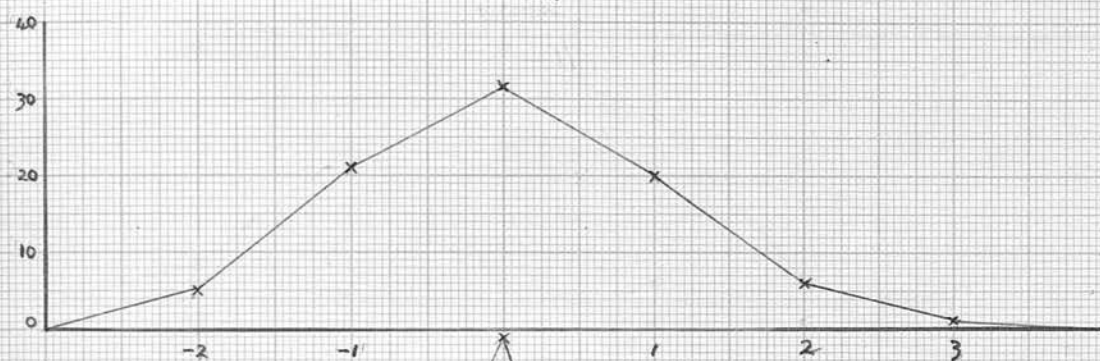
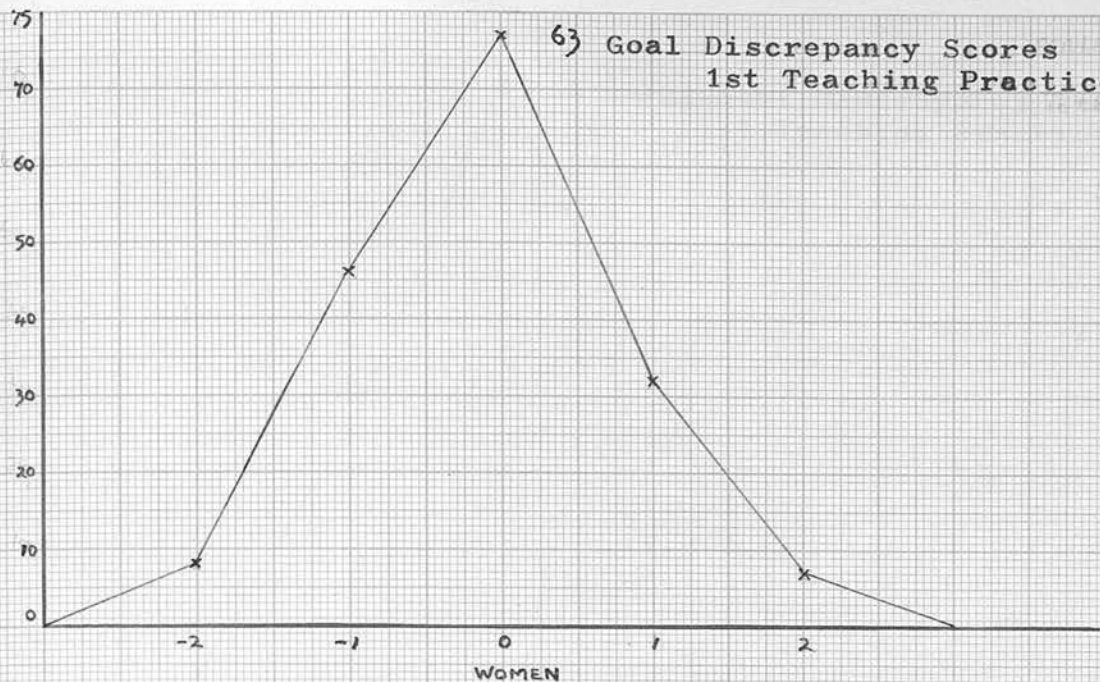




$$\bar{x} = 3.08 \quad \sigma = 0.55$$

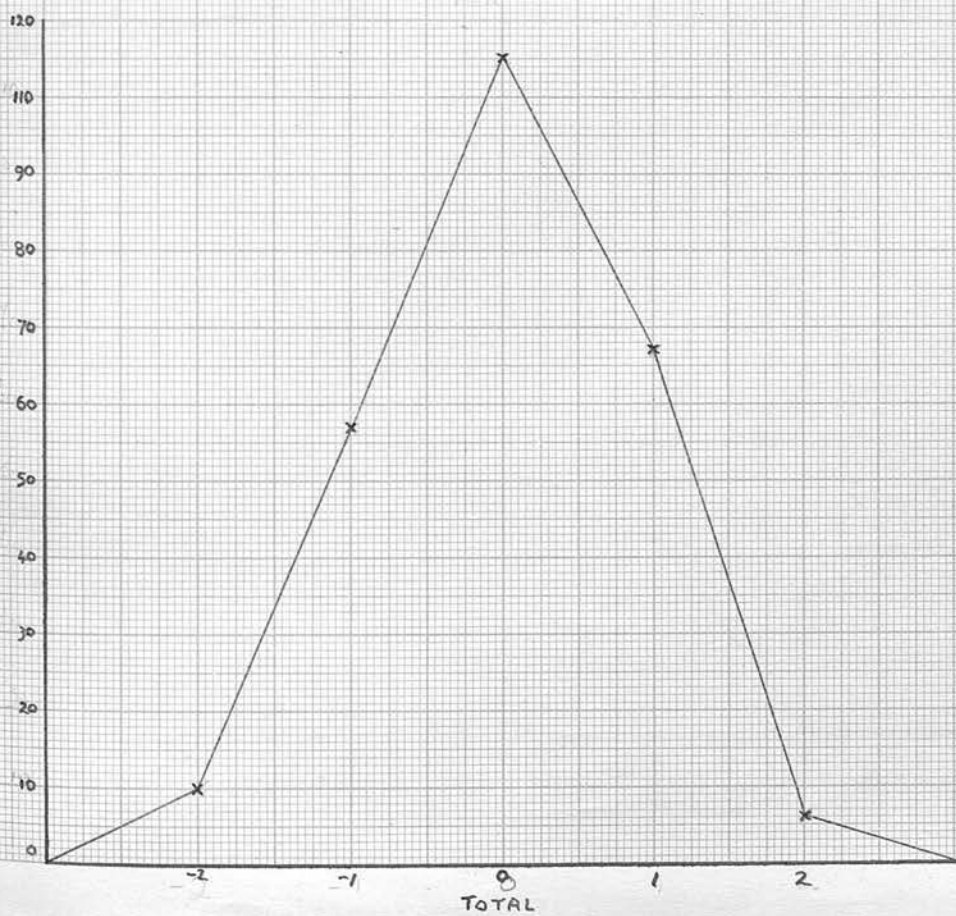
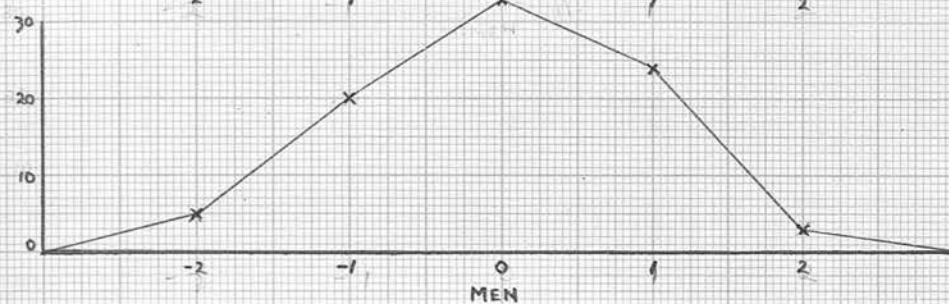
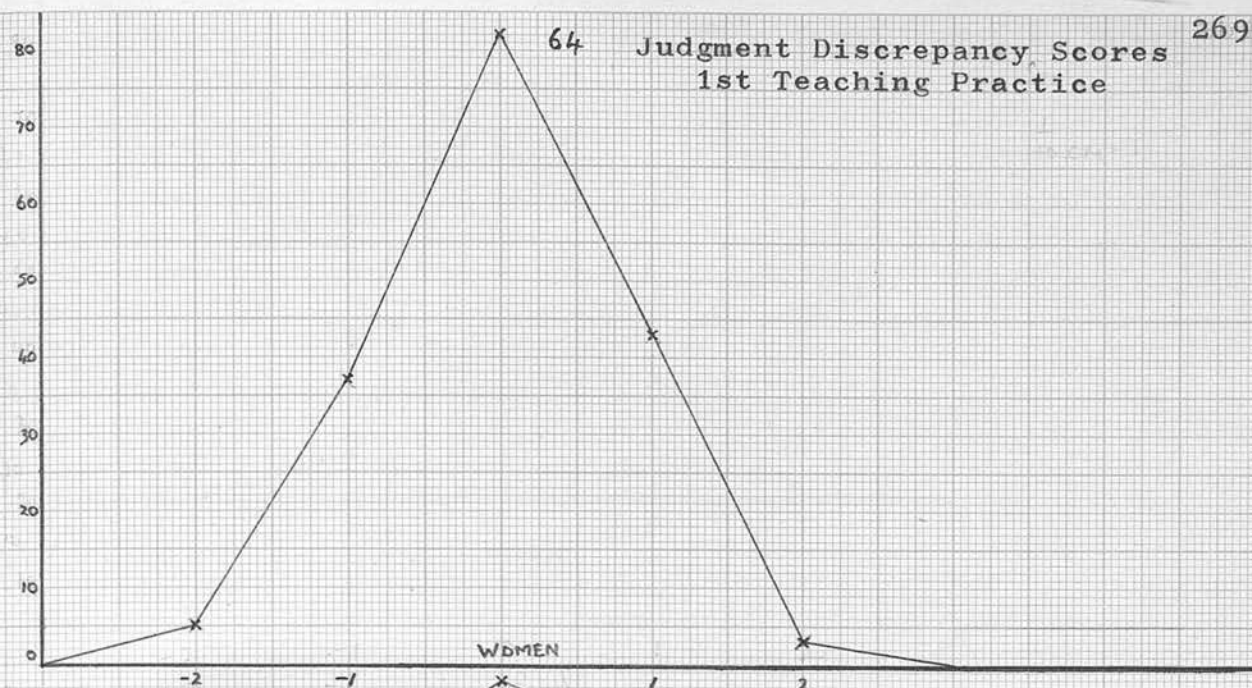
63 Goal Discrepancy Scores
1st Teaching Practice

268

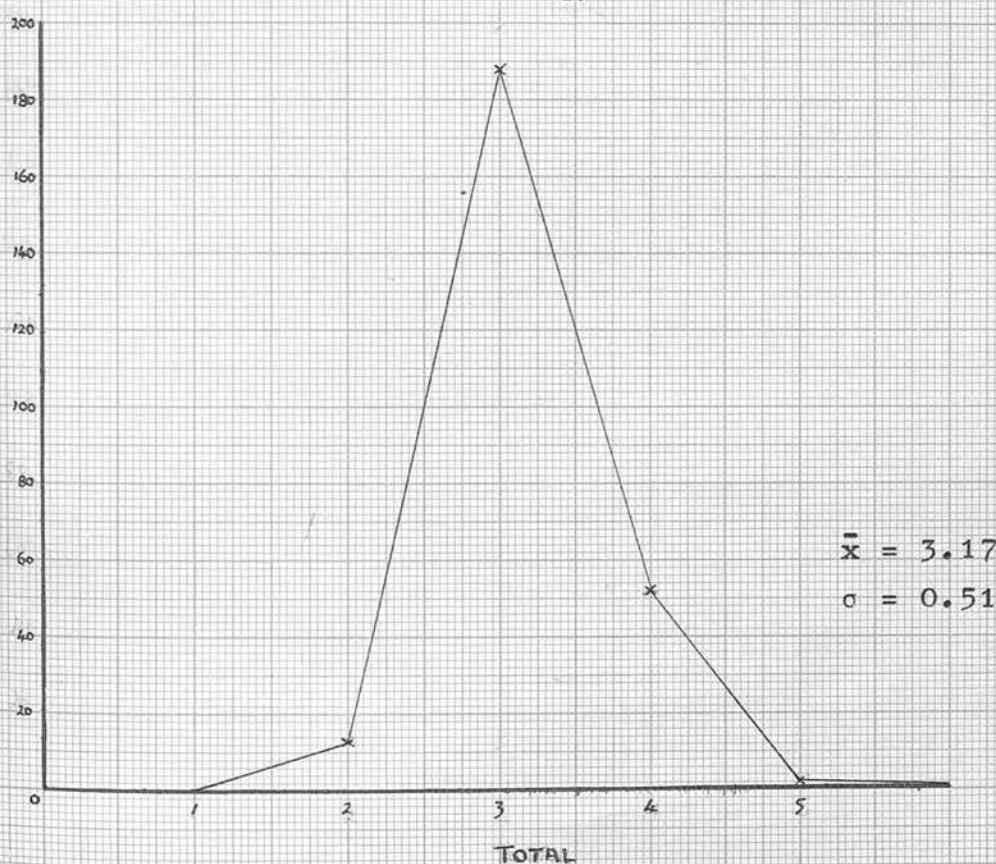
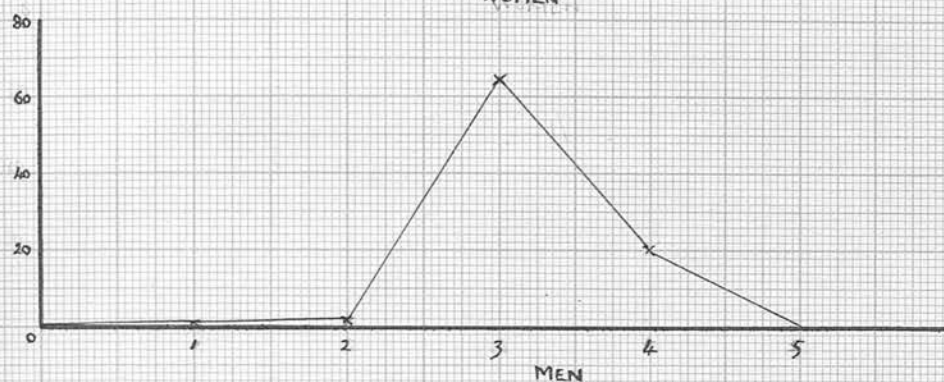
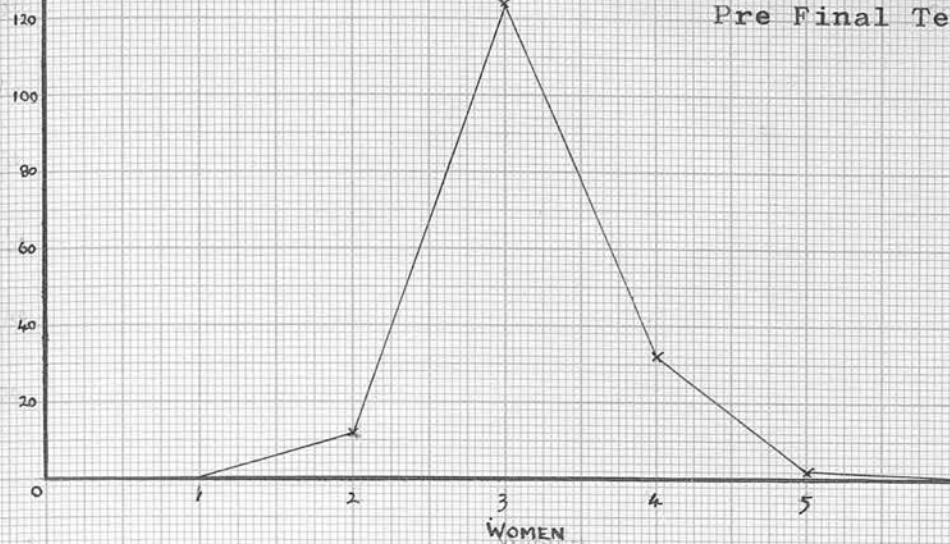


$$\bar{x} = -0.47$$

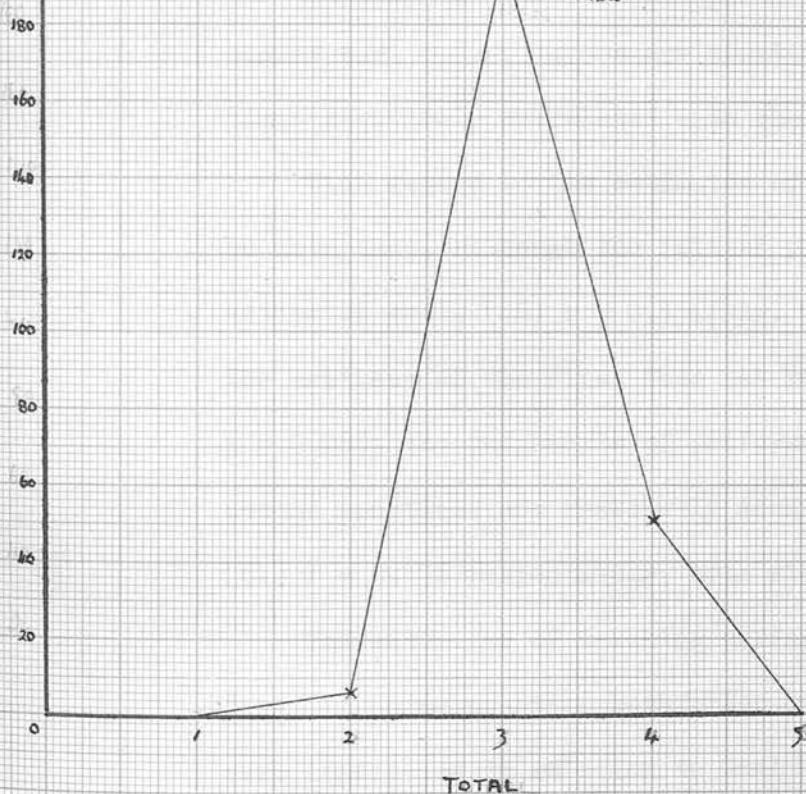
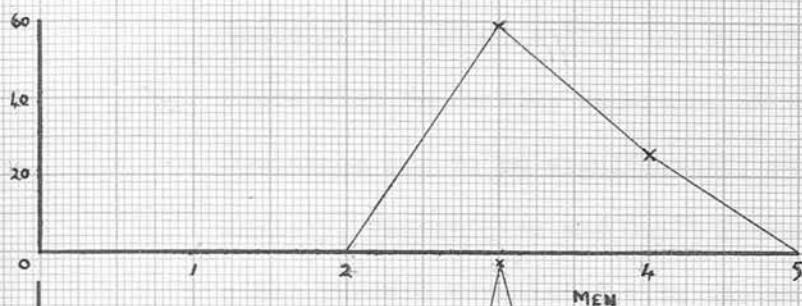
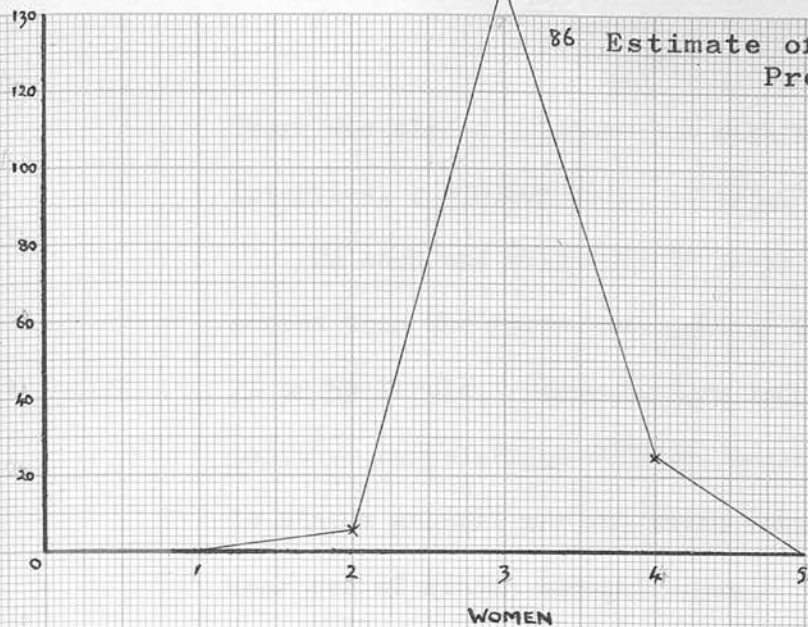
$$\sigma = 0.95$$



Pre Final Teaching Practice



% Estimate of Final Teaching Grade Pre Final Teaching Practice



$$\bar{x} = 3.18 \quad \sigma \approx 0.44$$

There was also a relationship with the performance on the (35) interview, $r = 0.203$ (Sig. at 1%).

On each and every one of these estimates the men had higher scores than the women, and most of these were significant at the 1% or 5% levels. These in turn reflect the tendency for the positive correlations with the estimates to include those relating to status amongst men and those which are negative to relate to measures of status amongst women.

In relation to the personality assessments there is a marked tendency for those making the highest estimates of performance to score high on *Parmia*, *Superego*, *Strength* and *Extraversion* and *Dominance* and to be significantly negatively correlated with *Anxiety*, *Neuroticism* and *Guilt Proneness*. With regard to the other factors correlated with the estimates, no clear pattern occurs e.g. *G.C.E.* passes are sometimes positively and at other times negatively correlated with the estimates.

With regard to the estimates of teaching it is interesting to note that, although the initial practice performance can be estimated well, (46) $r = 0.354$ (sig. at 1%) the correlation with the estimate of the Final does not reach significance level (42) $r = 0.064$; the judgements of performance after the first and second practices are reasonably accurate with (46) $r = 0.333$ and (61) $r = 0.356$ respectively, both significant at the 1% level.

The estimates of teaching performance in relation to the first teaching practice both prior and subsequent to the event were considered in relation to Goal Discrepancy (aspiration minus performance) and Judgement Discrepancy (performance minus judgement). These were examined in relation to other personality measures to investigate Eysenck's contention (1960) P. 40:

"It is known that normal people (non-neurotics, neither extravert nor introvert, i.e. neutral from the point of view of our hypothesis) tend to have slightly positive goal discrepancy scores and slightly negative judgement discrepancy scores.....The extravert is supposedly determined in his conduct by external objects and relations; consequently his discrepancy scores (i.e. his deviations from external reality, as represented by his actual P scores) should cluster around zero. The introvert is supposedly determined in his conduct by internal states rather than by objective fact. consequently his discrepancy scores should be considerably removed from zero. Normal persons should be intermediate between these two extremes".

Presumably the students in this investigation are normal by this definition and the correlations between these measures and Cattell's and Eysenck's measures of introversion/extraversion do not reach significance level, and the patterns are in line with the theory:

(17) Introversion	(39) Extraversion
(63) -	+
(64) +q	-

The position, therefore, is that most students deviate little from normality but the most extravert tend to have a higher level of aspiration and tend to produce positive scores indicating that their aspiration sometimes outstrips their performance, although their scores should be fairly near zero, while the introvert has a tendency to underestimate his performance, thus giving rise to a negative score and hence the negative correlation.

Generally there was a tendency for those whose names featured most prominently on the measures of student structure to have the highest Goal Discrepancies and this applied to choices made in terms of men, women and combined groups, but no correlation with choices received reaches significance level:

(67)	No. of students known well:	$r = 0.200$	sig. at 1%.
(73)	" " " 2 " and very well	$r = 0.176$	sig. at 1%.
(66)	" " females " "	$r = 0.155$	" " "
(65)	" " males " "	$r = 0.149$	" " 5%.
(72)	" " females " " and very well	$r = 0.136$	" " "
(71)	" " males " " " " "	$r = 0.129$	" " "

The remaining positive, uncontaminated coefficients with the present criterion are (39) Eysenck's Extraversion $r = 0.158$ (sig. at 5%).

With regard to the actual performance of students, it was found that those who had the smallest Goal Discrepancy on their first teaching practice tended to perform better in their theoretical work in Education in the first year than those with high Goal Discrepancies:

(19) Education Year I $r = 0.159$ sig. at 5%.

But by the third year the pattern is reversed (the 2nd year result in Education Theory is also negative but insignificant (89) $r = -0.99$), as indicated above (90) Education Year 3 $r = 0.158$.

The coefficients derived from the correlations with the teaching grades remain consistently negative with (61) 2nd year Teaching Practice, $r = -0.256$ and (91) Final Teaching Practice, $r = -0.298$, both of which are significant beyond 1% which supports the view that those who judge their first practice most effectively are best at judging their ultimate performances. It will be noted moreover that the measure of agreement even increases.

In relation to Judgement Discrepancy (64 P-J), the teaching performance for the second and third years are positive with a progressive trend towards greater agreement (both sig. at 1%)

Conversely Judgement discrepancy appears negatively correlated with (8) Premsia $r = -0.197$ (sig. at 1%), (22)

Mathematics Year I, $r = -0.156$ and (23) Cattell's Verbal Intelligence $r = -0.137$, both significant at 5%. Thus more accurate judgements after the event are made by the more intelligent, those who have a bent for mathematics and are tough and realistic in their judgement. Both Goal and Judgement Discrepancy measures correlate negatively with estimates of difficulties suggesting that those with the most accurate perceptions of their own performance have the least difficulties.

Finally, it can be said that both the initial and fourth major hypotheses are supported by the correlations with the self-estimates directly, and of Judgement Discrepancy, with the performance measures.

*Erratum: In spite of typographical error pages are in correct sequence.

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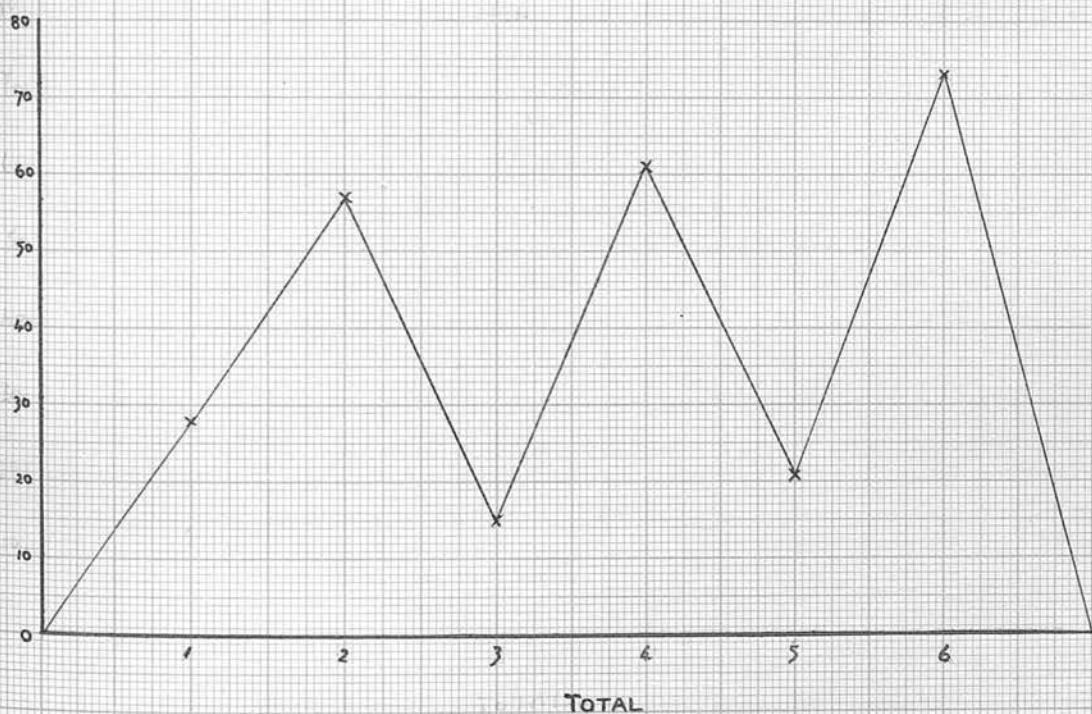
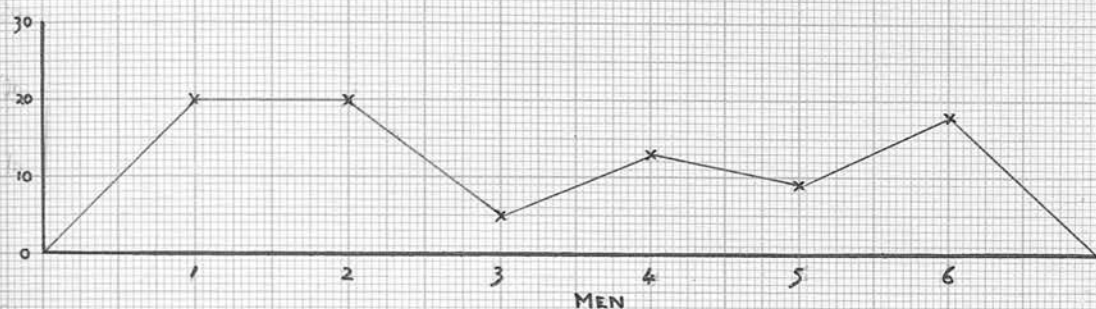
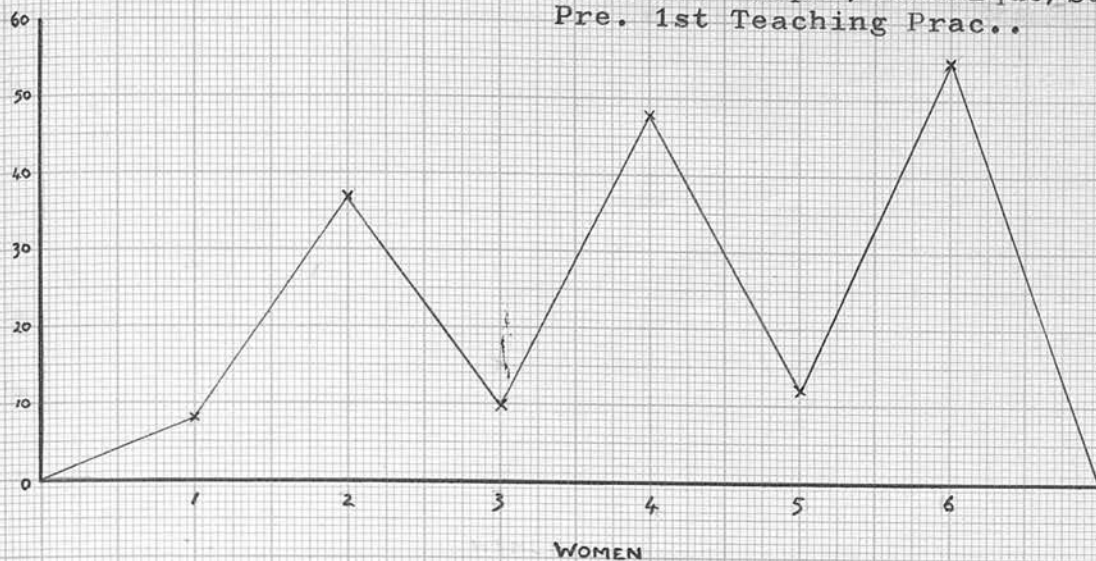
Variables 53 and 54 Pupil/Technique/Subject Importance

These variables test the fourth hypothesis in attempting to see whether individuals with a higher regard for pupils than subjects perform better in teaching, and those who put a premium upon subjects perform better in theory.

It may be remembered that students were asked to place in order of importance to them the above three aspects in teaching. The responses were then scored fairly arbitrarily as previously indicated (P.156). The first responses were taken prior to the first teaching practice and the second, subsequent to it. It was found that the mean on the first occasion was 3.82 and on the second 4.28 which indicates a significant shift towards a more 'progressive' view point. At the same time the distribution of scores is decidedly abnormal so that the analysis of these variables should be interpreted with caution. As it is, the mean for the men and women on the first occasion are 3.294 and 4.082 respectively: this yields a t of 3.257 indicative of a significant difference at 1%. On the second, the means for the men and women were 4.082 and 4.382 which produces an insignificant t of 1.36.

From this it appears that the men change their views more radically as a result of their teaching practice experiences than do the women.

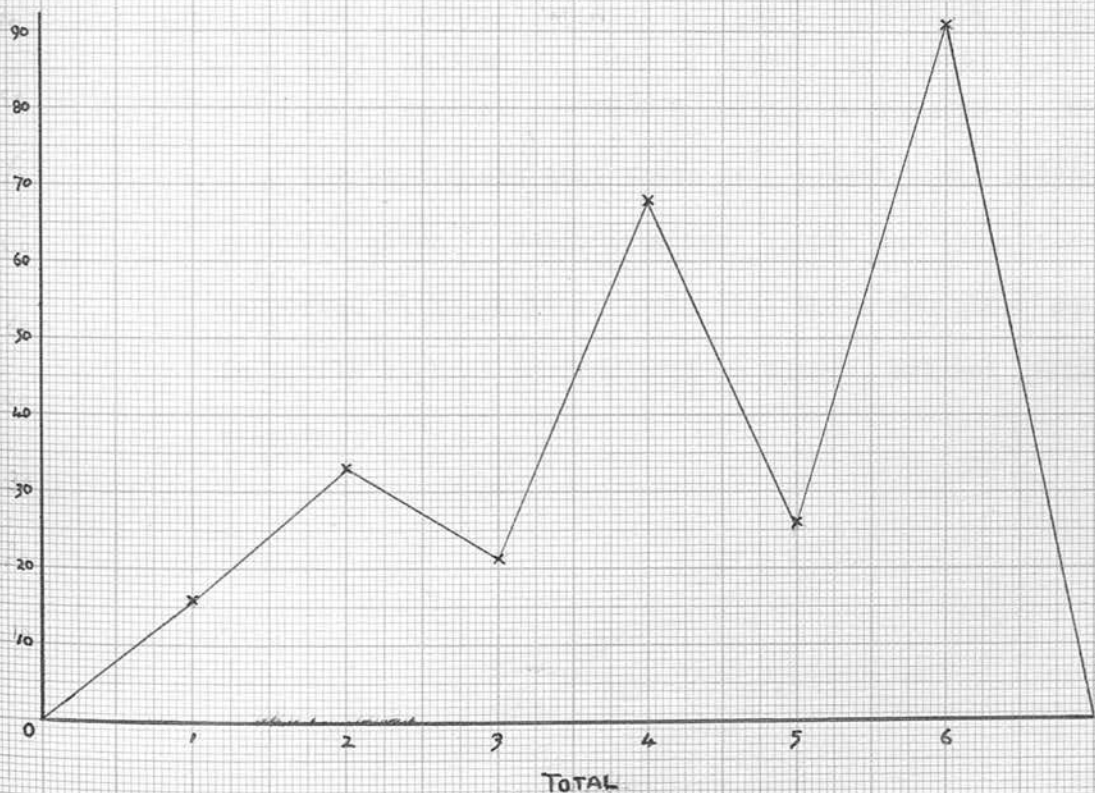
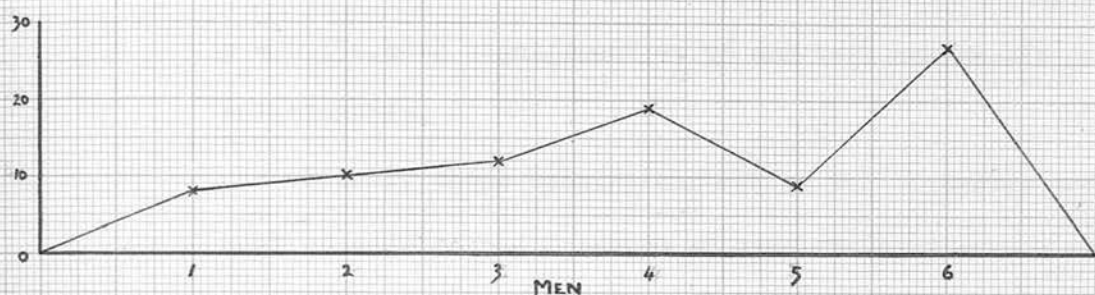
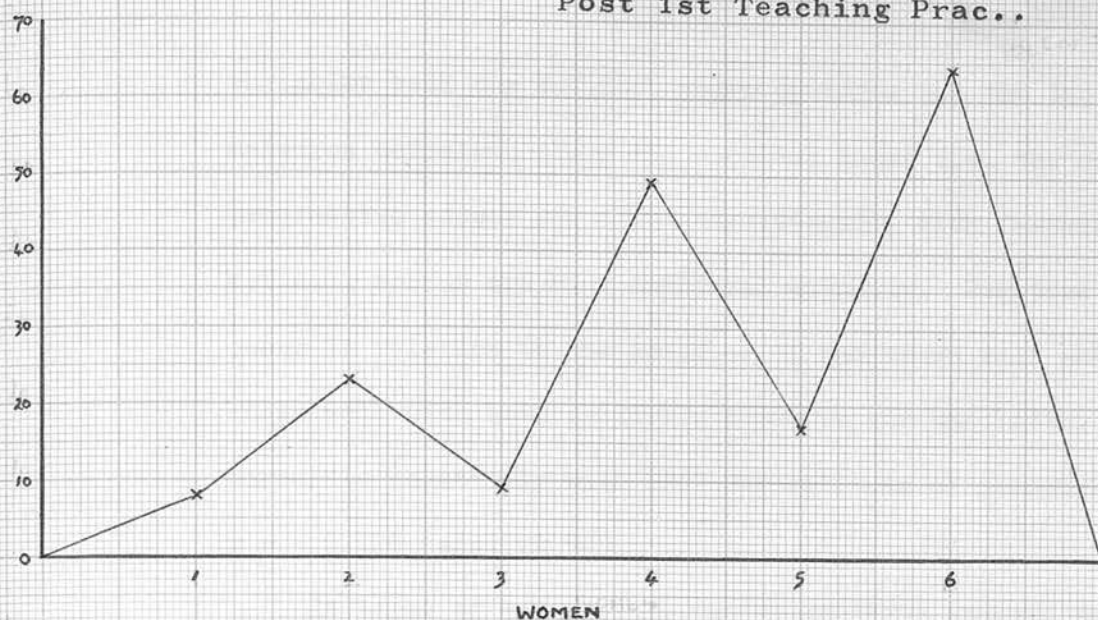
The two responses produce an r of 0.398 (sig. at 1%). The former correlates at this level also with the (28) M.T.A.I. Final Score $r = 0.184$, the (26) M.T.A.I. Pro score, $r = 0.177$ and the (52) Pitts E.M. Scales, $r = 0.163$. Whether the relation between the Pitts E.M. Scale and the M.T.A.I. results given above derive from the predominant influence of the former, the latter, or a superordinate factor is problematical. With regard to the present



$$\bar{x} = 3.82 \quad \sigma = 1.77$$

54 Importance Pupil/Technique/Subject
Post 1st Teaching Prac..

29898



$$\bar{x} = 4.28 \quad \sigma = 1.62$$

variables both the M.T.A.I. score patterns and the two Pitts' measures correlate along the expected lines i.e. the more progressive scores correlate significantly with favourable M.T.A.I. scores and high emotional maturity. Negative correlations occur in relation to the measures of men known well and by whom known well with both criterion measures, and the latter one also correlate negatively with (30) the estimate of personal difficulties $r = - 0.126$ (sig. at 5%).

In terms of personality variables there appears to be an association with (13) Radicalism $r = 0.144$ and (1) Cyclothymia $r = 0.138$, both significant at 5% and both reasonable in their relationship.

Finally those scoring highest on the criterion tend to achieve most on some of the measures of academic performance as follows:

(22)	Mathematics	Year 1	(53)	$r = 0.153$	sig. at 5%.
(87)	English	Year 2	(53)	$r = 0.130$	" " "
(87)	English	Year 2	(54)	$r = 0.150$	" " "

The hypothesis that there is a relationship between the priority given to subject matter, pupils and techniques is supported although it is found that those who place an interest in pupils highest perform best in theory, but not necessarily in teaching.

Estimation of Difficulties

Primary variables based on estimates of personal difficulties and those ascribed to others prior and subsequent to teaching practice experience: Variables 29, 30, 31, 32, 59, 60, 83 and 84. Other variables based on changes in estimates and of divergencies from actual calculated mean levels of difficulties: Variables 36, 37, 47, 48, 49, 50, 56, 57, and 62.

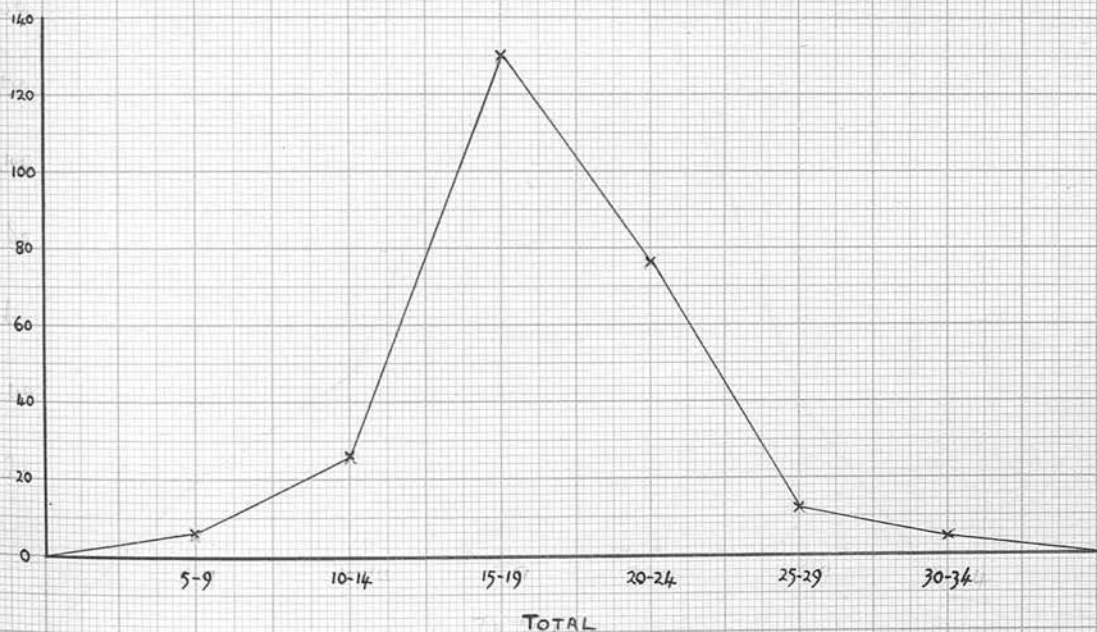
These predictor variables are used to examine the initial hypotheses, and those relating to the performance of the neurotic and those relating to experimental measures.

Students were asked to indicate by an X-O technique the level of difficulty which they felt other students experienced in a number of situations, previously suggested by other non-sample groups. These responses were indicated on a 6 point scale which finally ranged from 0 to 5 for each item. The absolute ceiling was not fixed as students could add to the list of areas of difficulty if they so wished, but, although a few took the opportunity, most confined themselves to the printed pattern which thus gave a ceiling of 48.

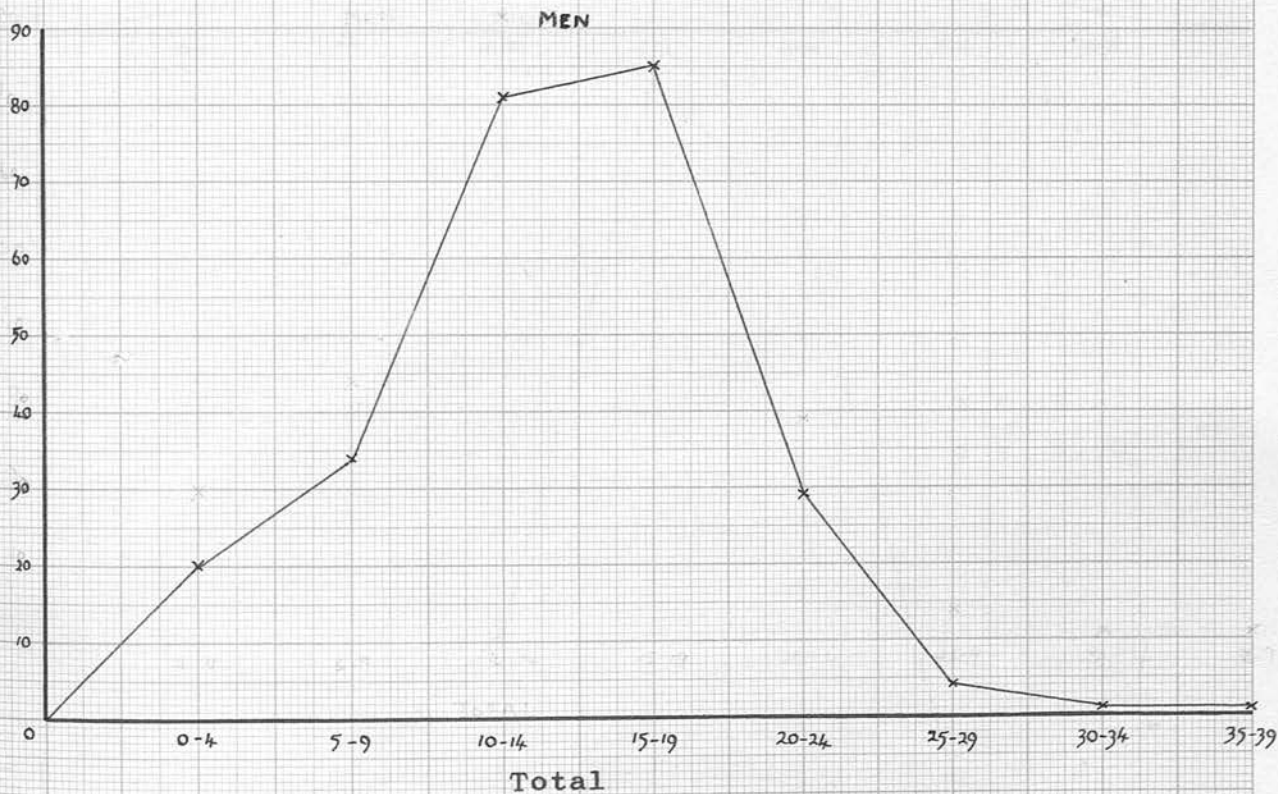
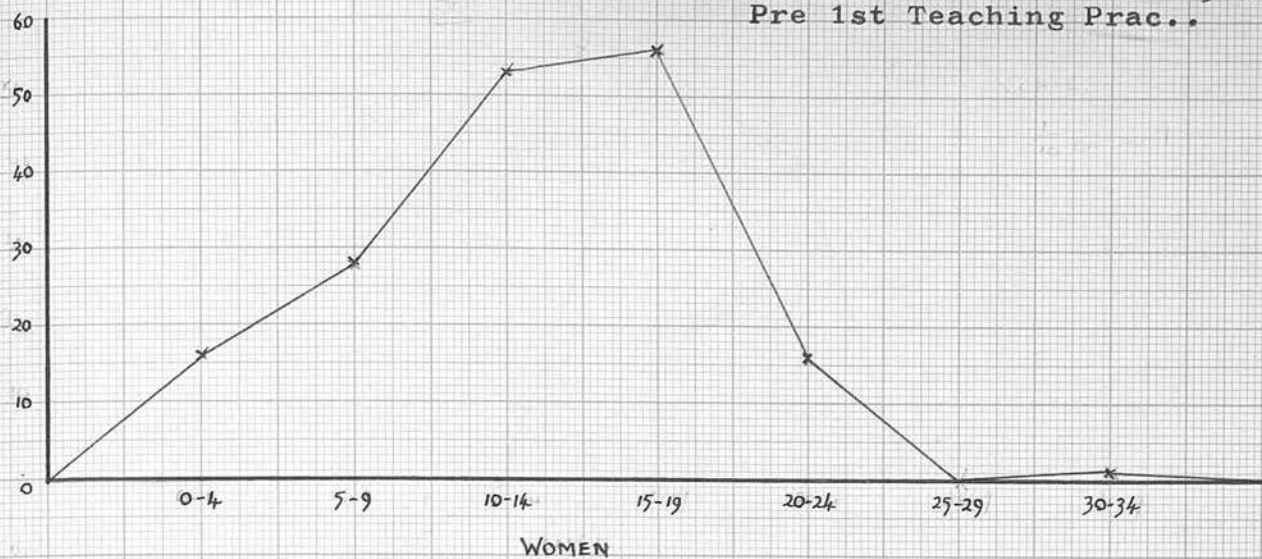
The pattern of difficulties is not a simple one but it does show a number of interesting features including the consistent placing of others difficulties at a higher level than one's own:

Others	18.51	1st T.P.	18.22 : 19.05	2nd T.P.	18.05	3rd T.P.	
Own	13.69	"	11.31 : 13.89	"	11.42	"	"

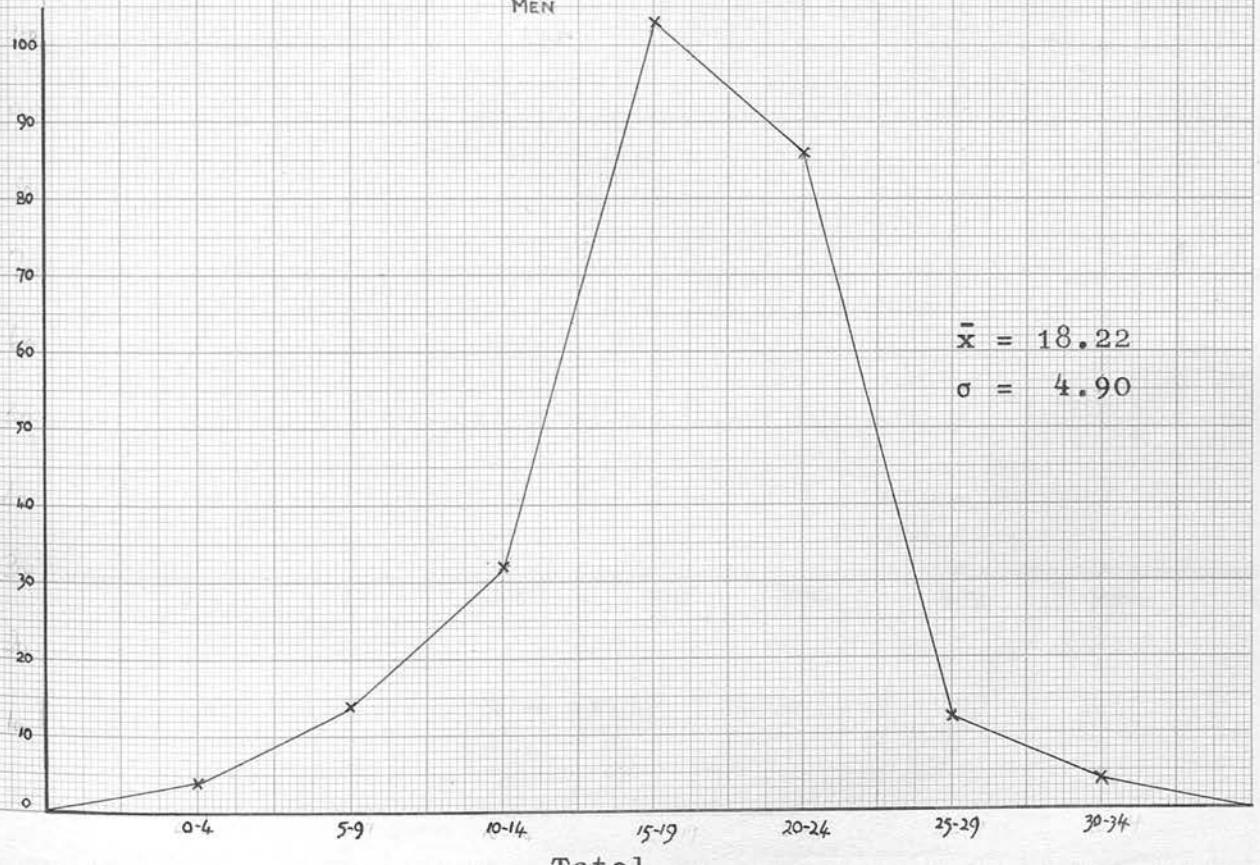
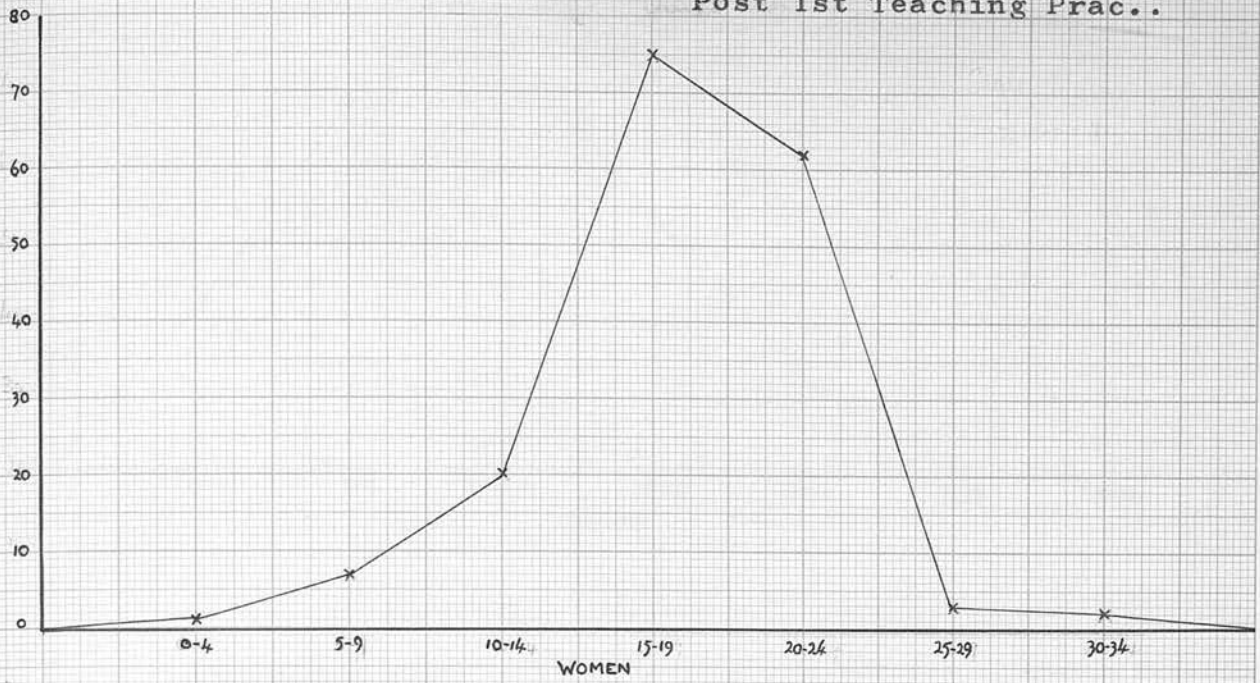
It is also noticable that there is a sharp reduction in the difficulty measure for both criteria from the pre to the post practice assessments and, although the level rises by the second pre practice period, it reduces below the initial level before the third practice. A possible reason for the higher anticipated difficulty level at the second teaching practice stage is that Infant - Junior course students went initially to Infant schools



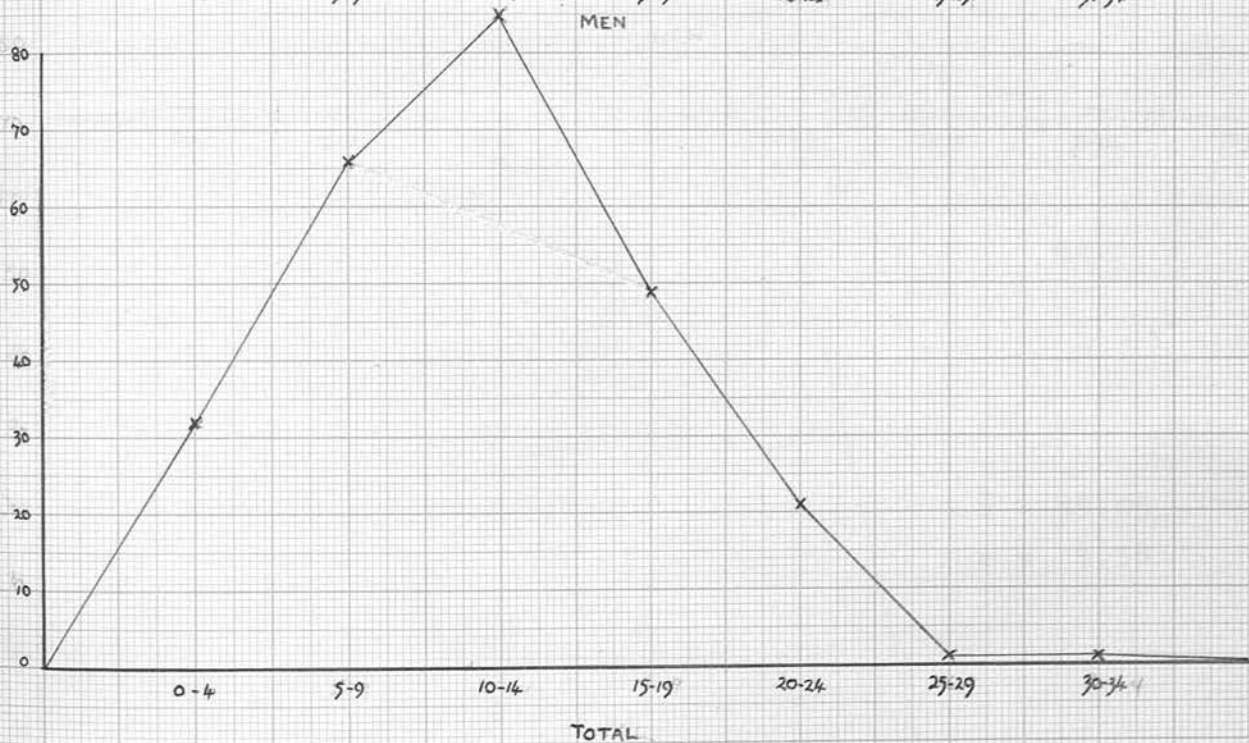
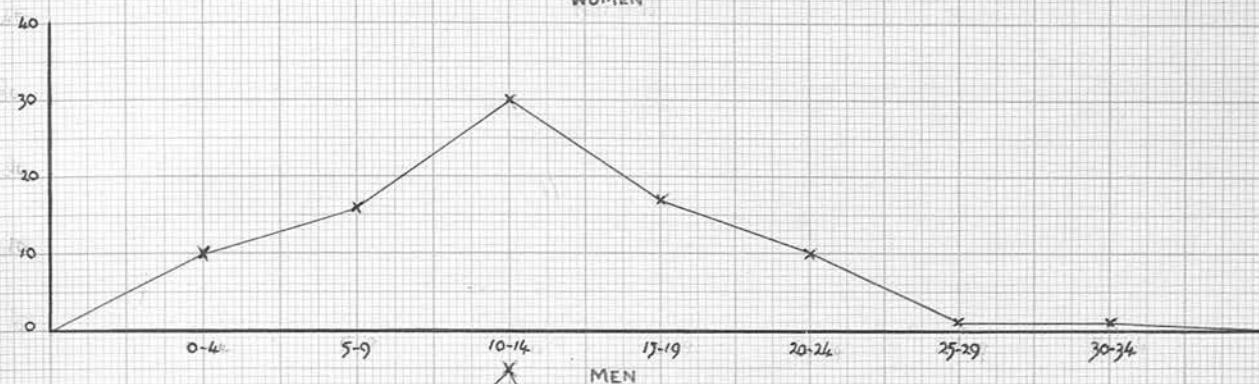
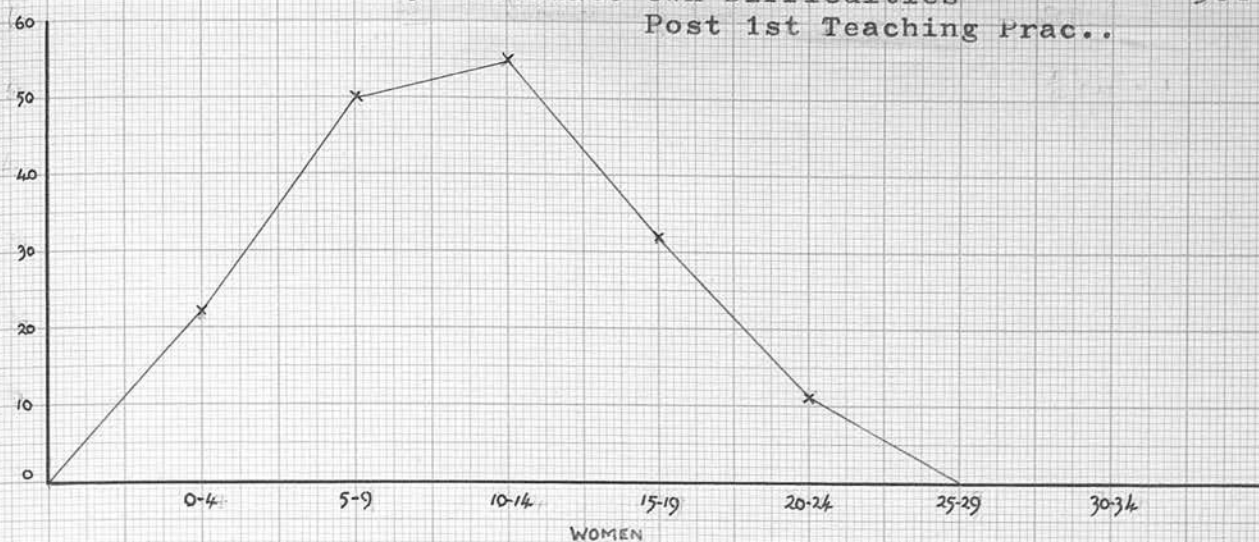
$$\bar{x} = 18.51 \quad \sigma = 4.19$$



$$\bar{x} = 13.69 \quad \sigma = 5.62$$



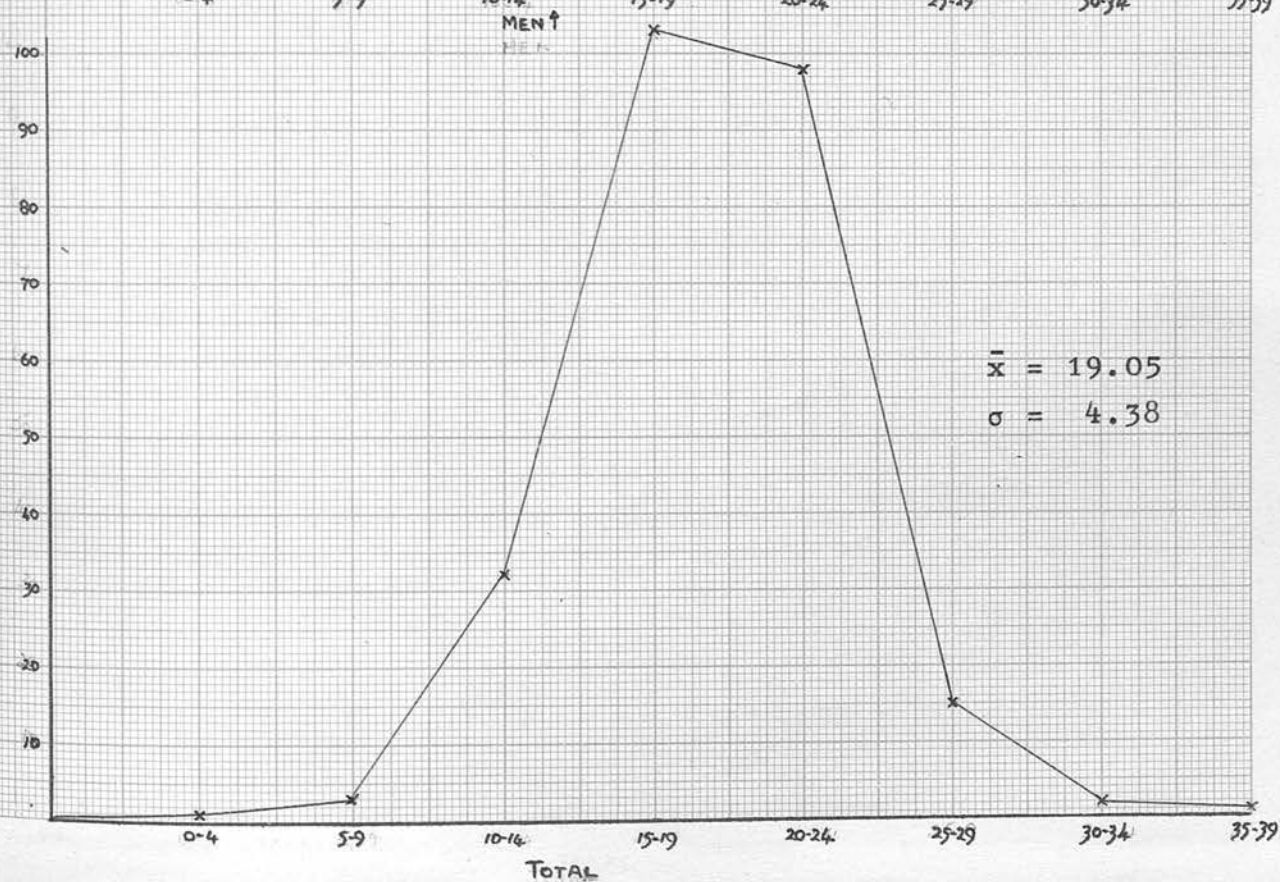
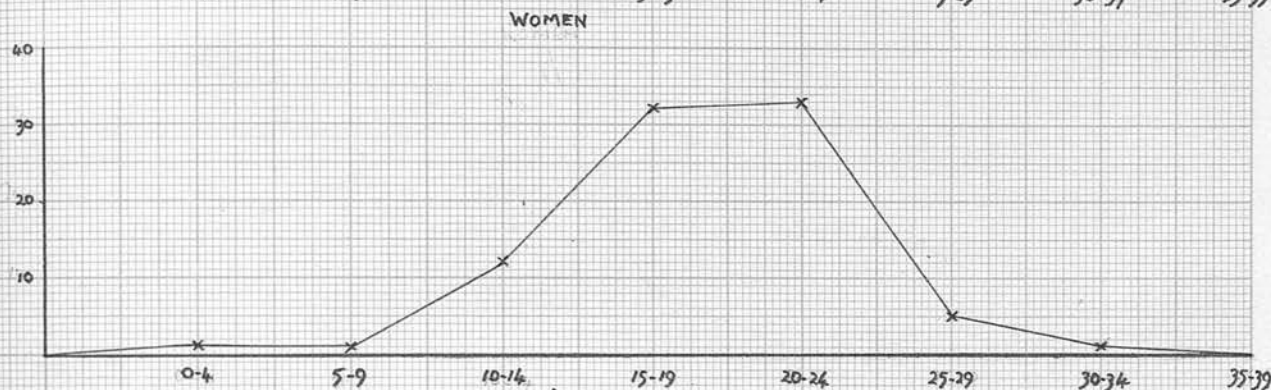
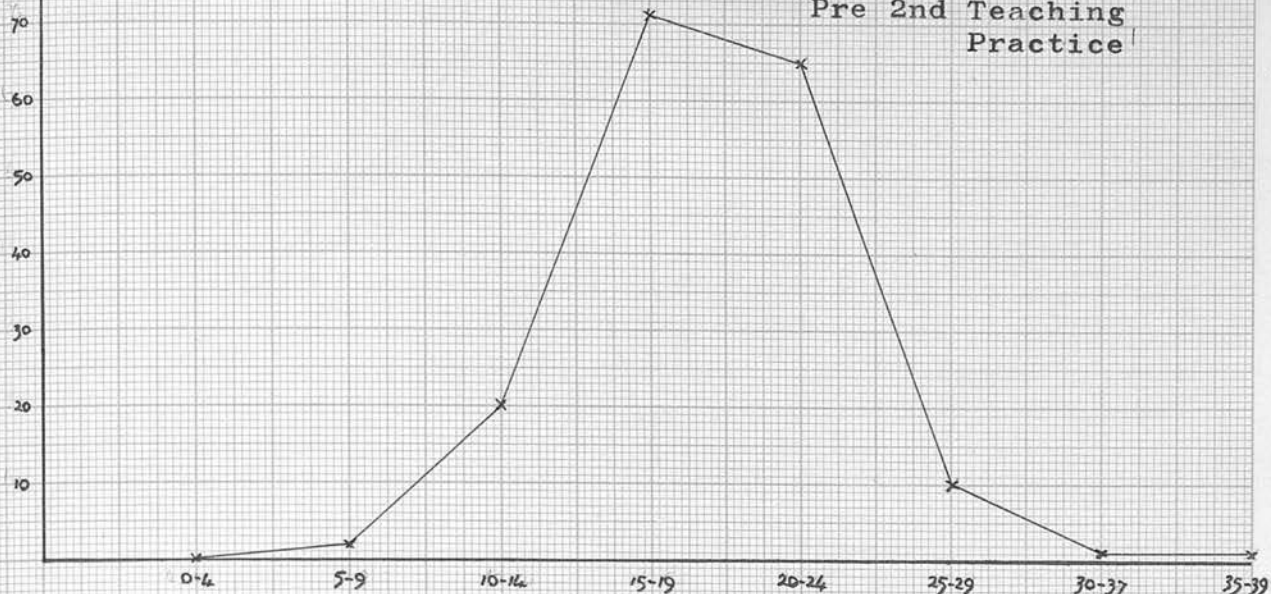
Post 1st Teaching Prac..



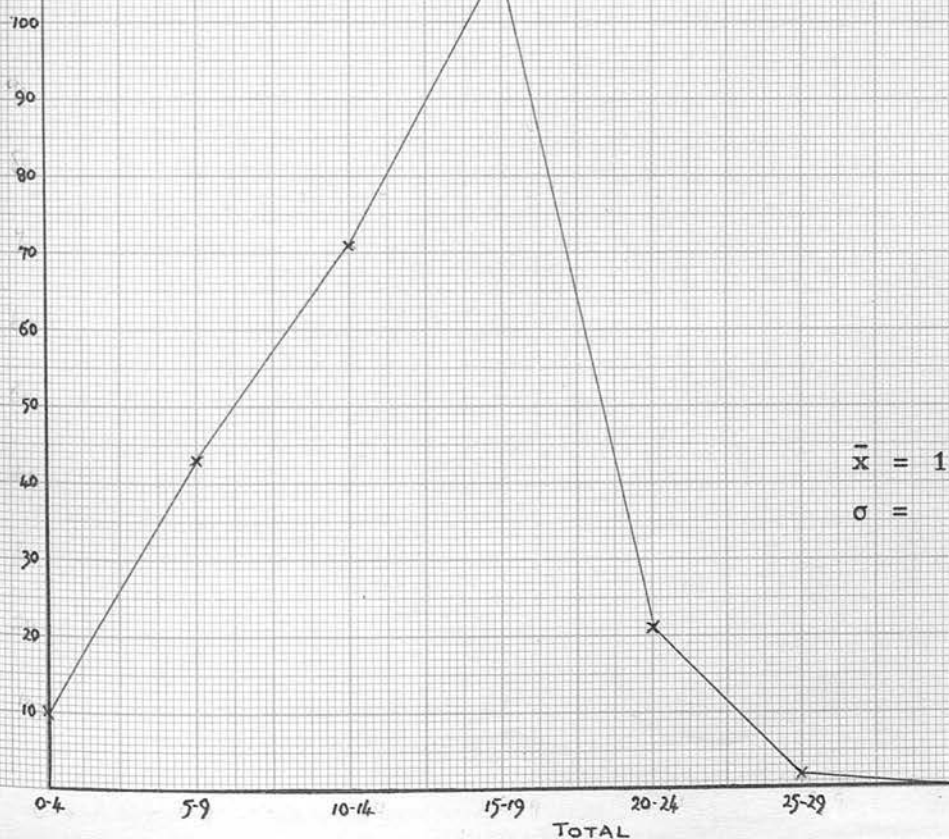
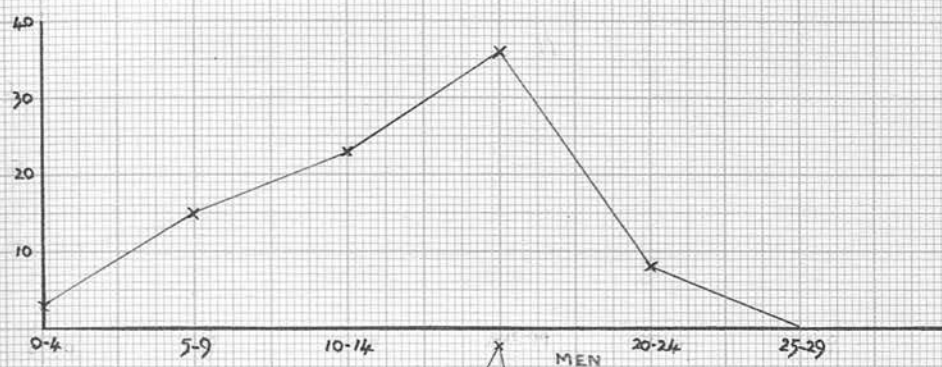
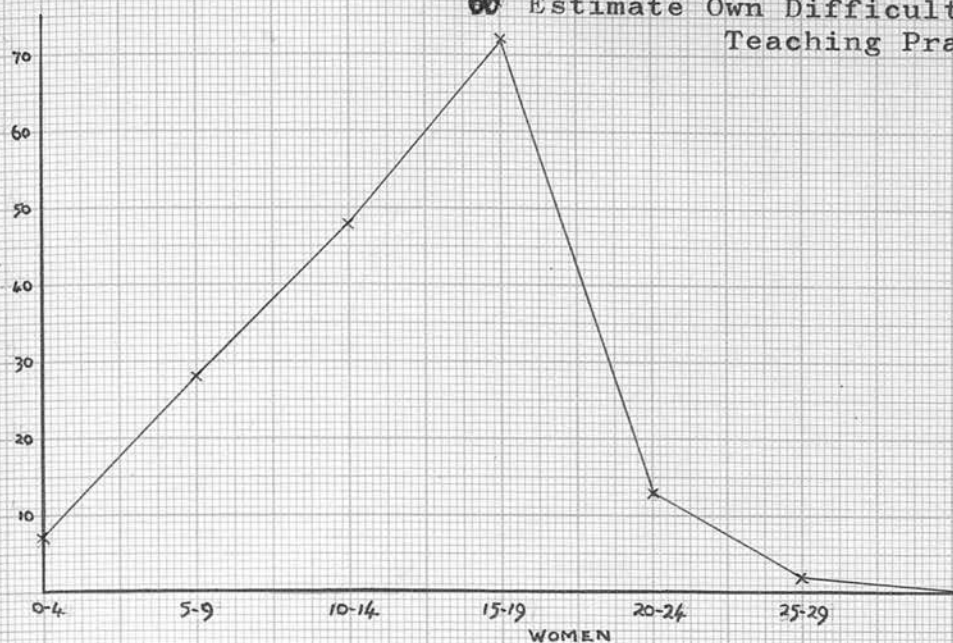
$$\bar{x} = 11.31 \quad \sigma = 5.62$$

89 Estimate Others' Difficulties Pre 2nd Teaching Practice

305



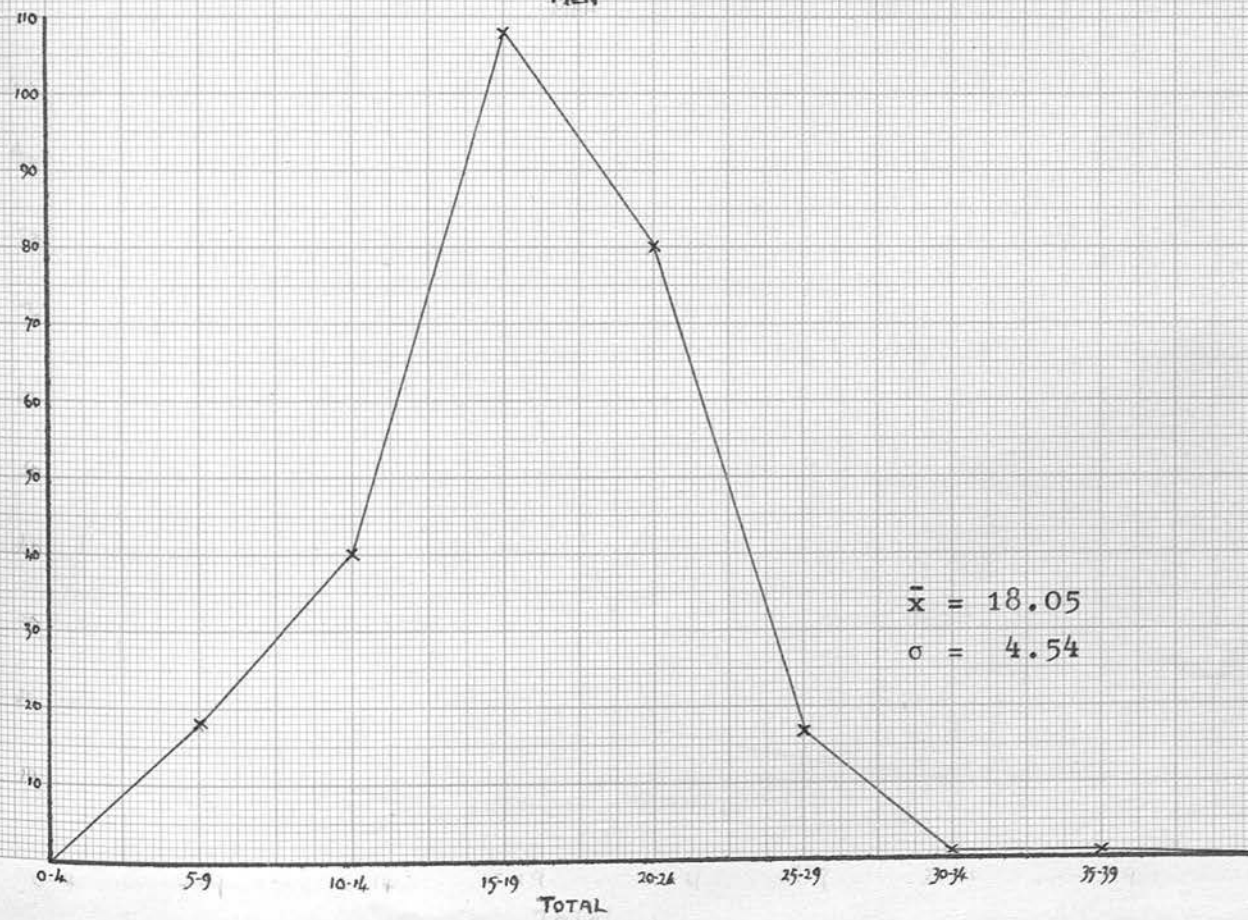
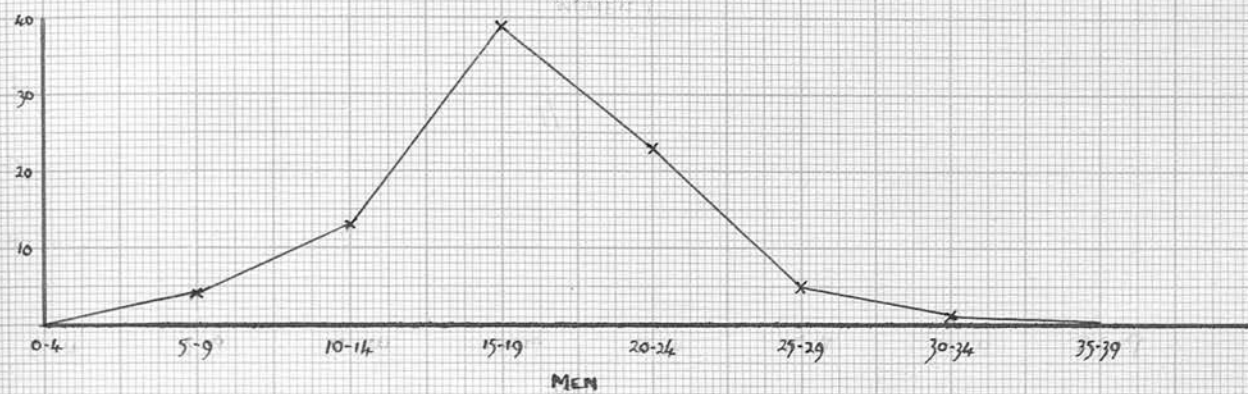
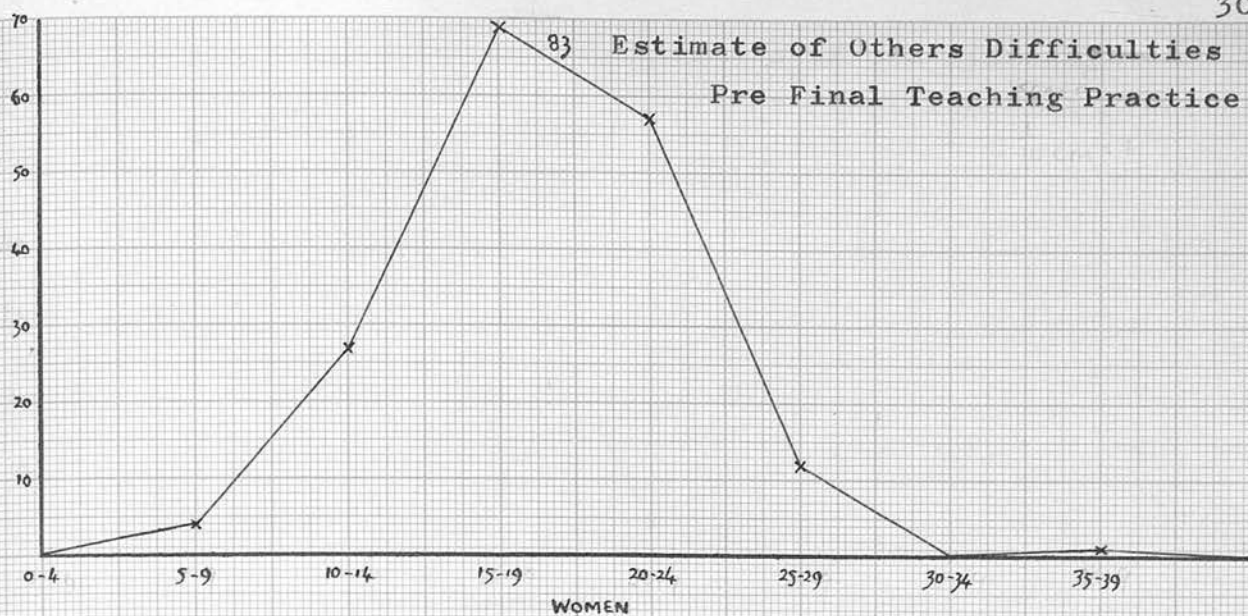
60 Estimate Own Difficulties Pre 2nd 306
Teaching Practice

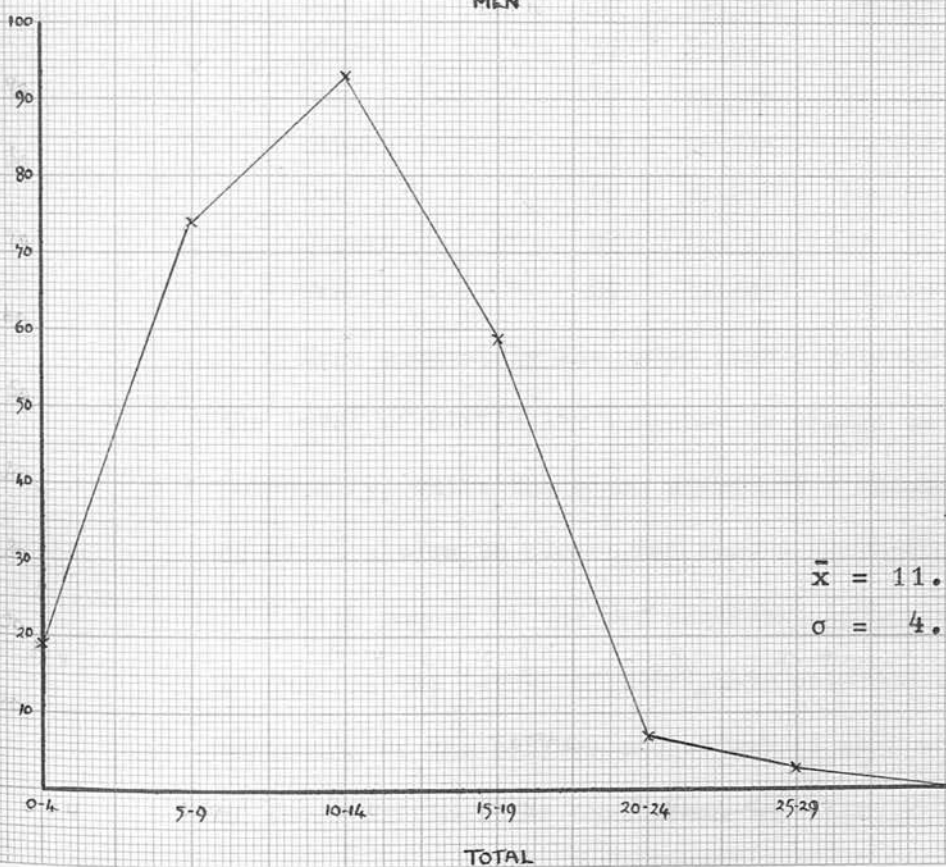
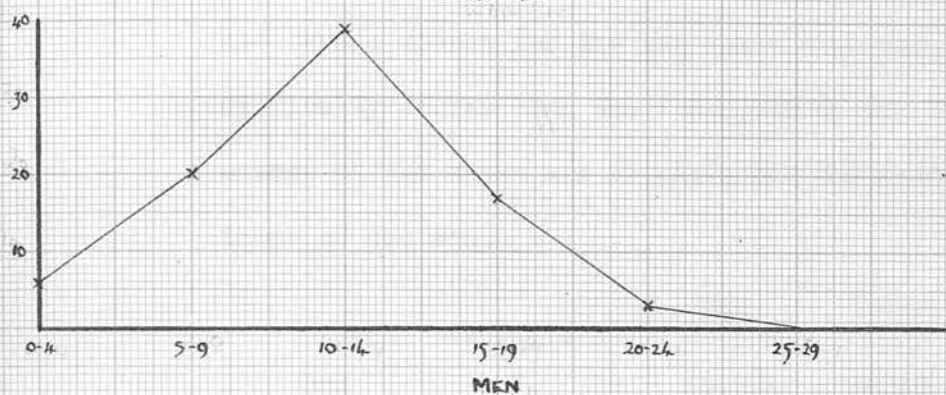
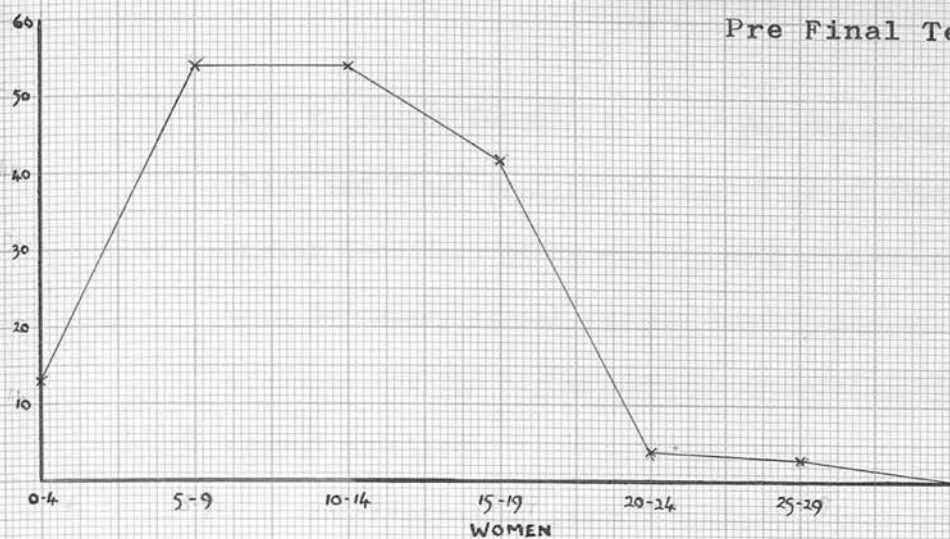


$$\bar{x} = 13.89$$

$$\sigma = 5.07$$

83 Estimate of Others Difficulties Pre Final Teaching Practice





then to Junior Schools and most had the intention of doing their third and final practice in this type of school. So too, the Junior Secondary group started with Junior school experience and then Secondary school for the later practices. Perhaps this accounts for the higher anxiety or difficulty levels at the second practice.

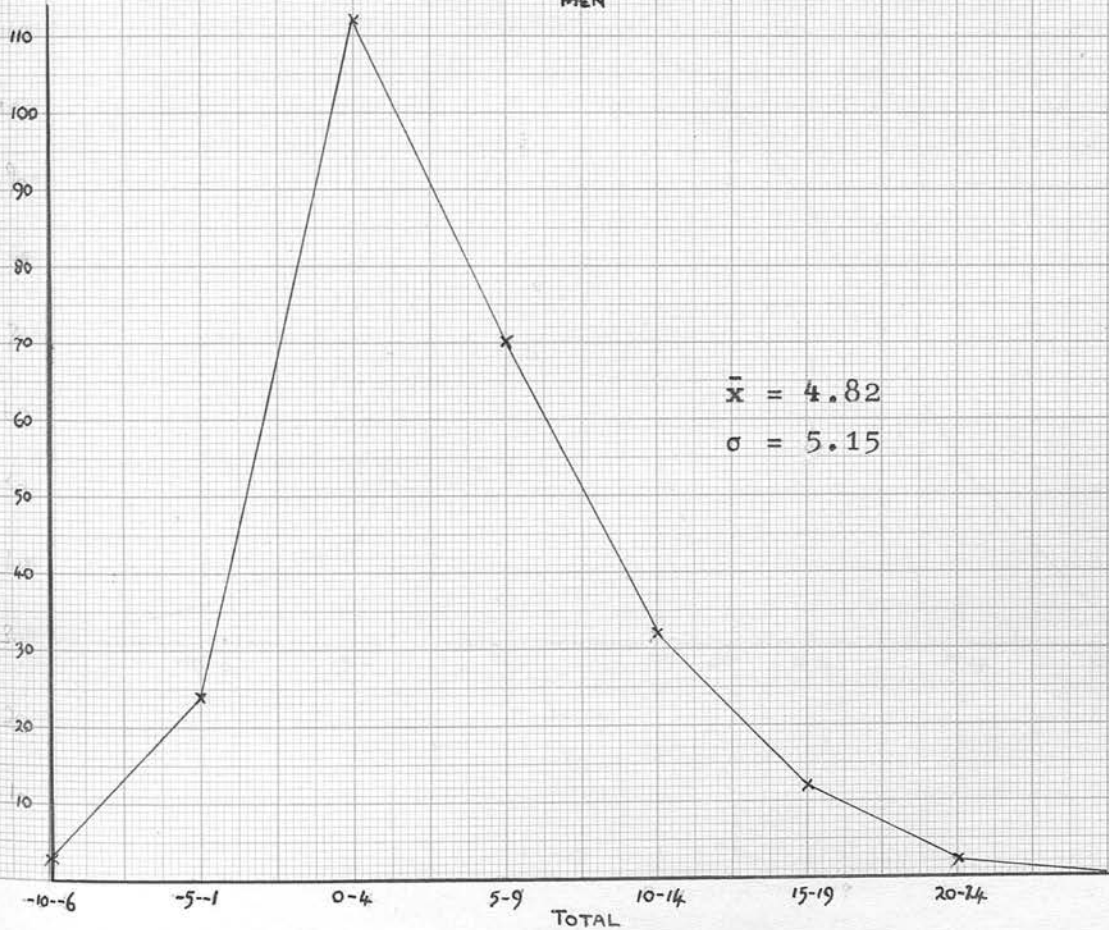
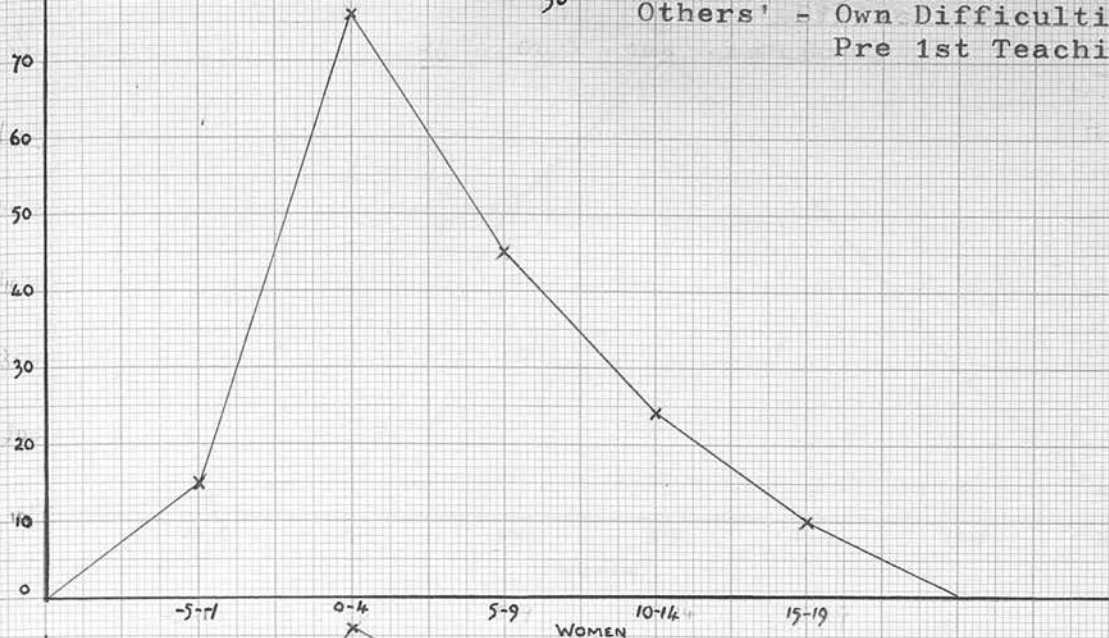
An interesting pattern emerges from a scrutiny of the male and female scores for the men start with significantly higher difficulty scores than the women, but by the third year the scores of the women are slightly, but insignificantly, higher than those of the men.

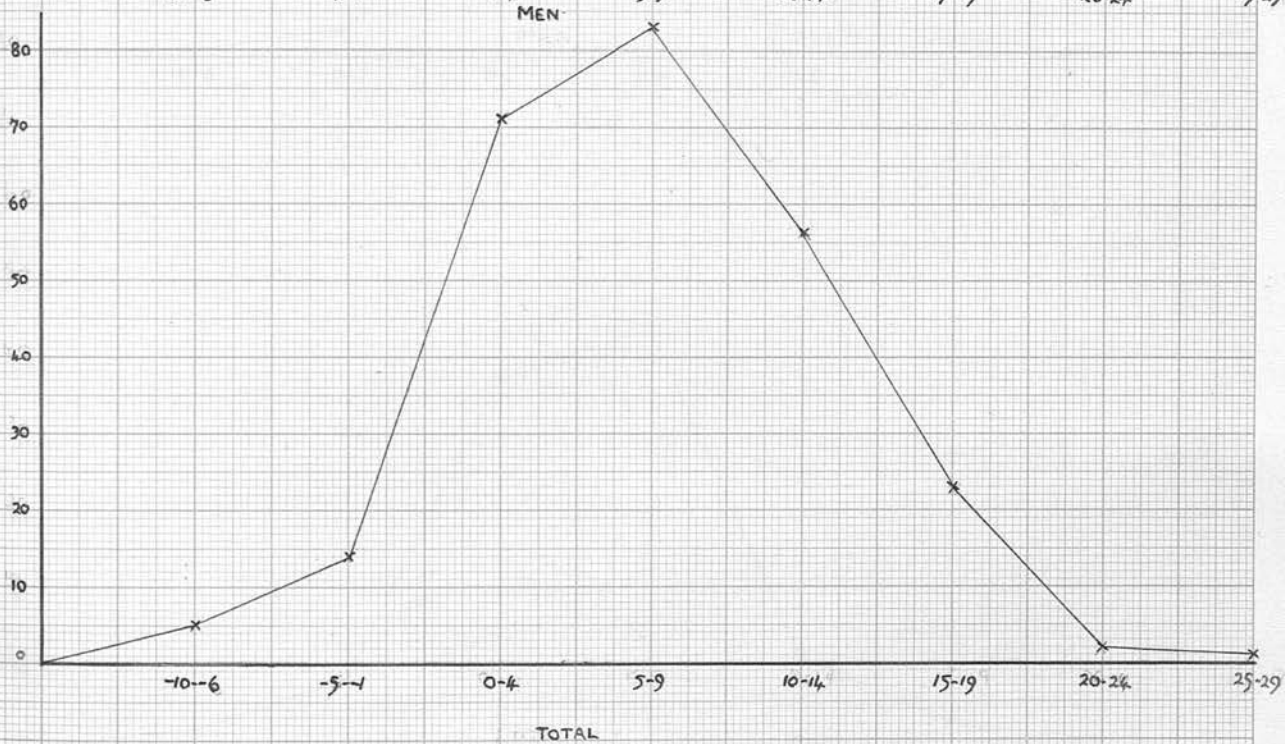
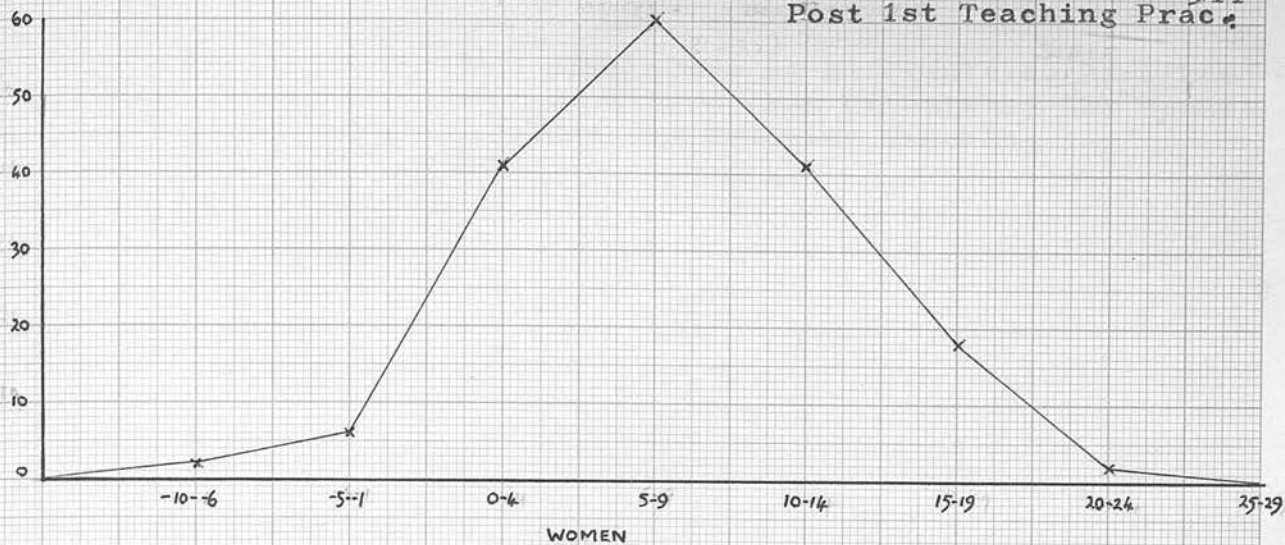
			Men	Women	t	sig.
Others.	Variable 29		19.329	18.094	2.164	5%
Own	" 30		15.200	12.941	2.998	1%
Others	" 31		18.047	18.300	0.348	N.S.
Own	" 32		12.506	10.712	2.319	5%
Others	" 59		18.765	19.194	0.699	N.S.
Own	" 60		14.000	13.836	0.243	N.S.
Others	" 83		17.847	18.159	0.523	N.S.
Own	" 84		11.635	11.318	0.501	N.S.

More accurately the males show a greater reduction in both the level of difficulty ascribed to others as well as suffered personally, while the women attribute a slightly higher level of difficulties to others but show a decrease in their own.

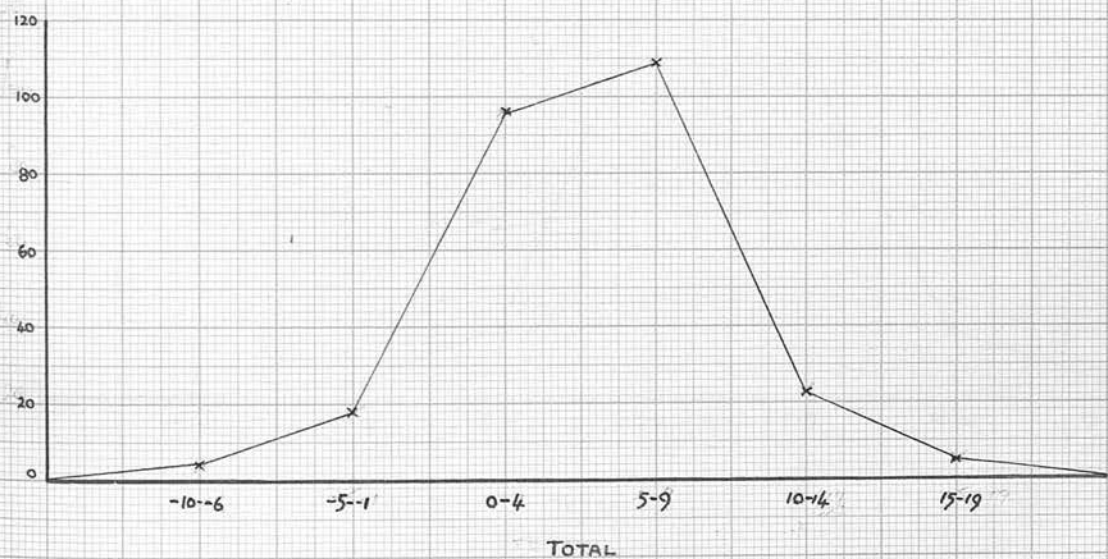
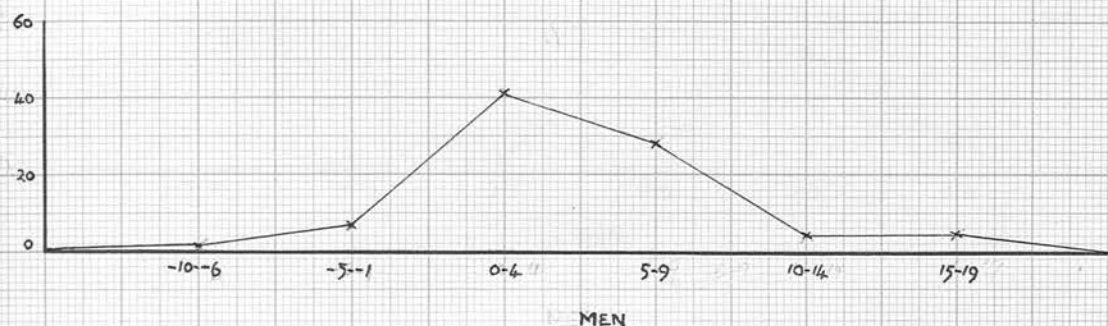
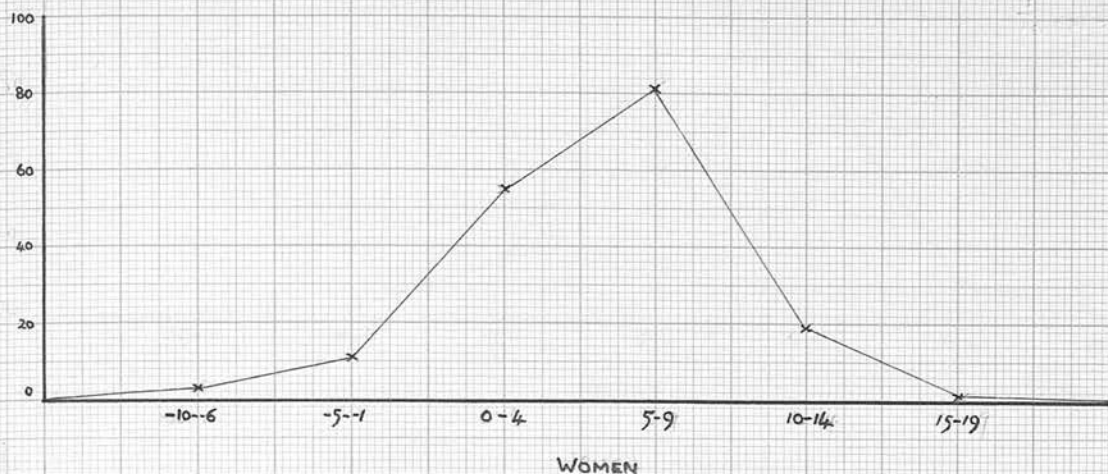
With regard to the correlational analysis, it was found that, in general the levels of difficulty ascribed to others at the beginning of the college course agreed well with the estimates made of these difficulties throughout the three year period. For example;

Estimate of others' Difficulties Pre 1st Teaching Practice correlated $r = 0.122$ with (31) Estimate of difficulties Post 1st Teaching Practice (sig. at 5%) $r = 0.223$ with (83) Estimate of difficulties Pre 3rd Teaching Practice (sig. at 1%).

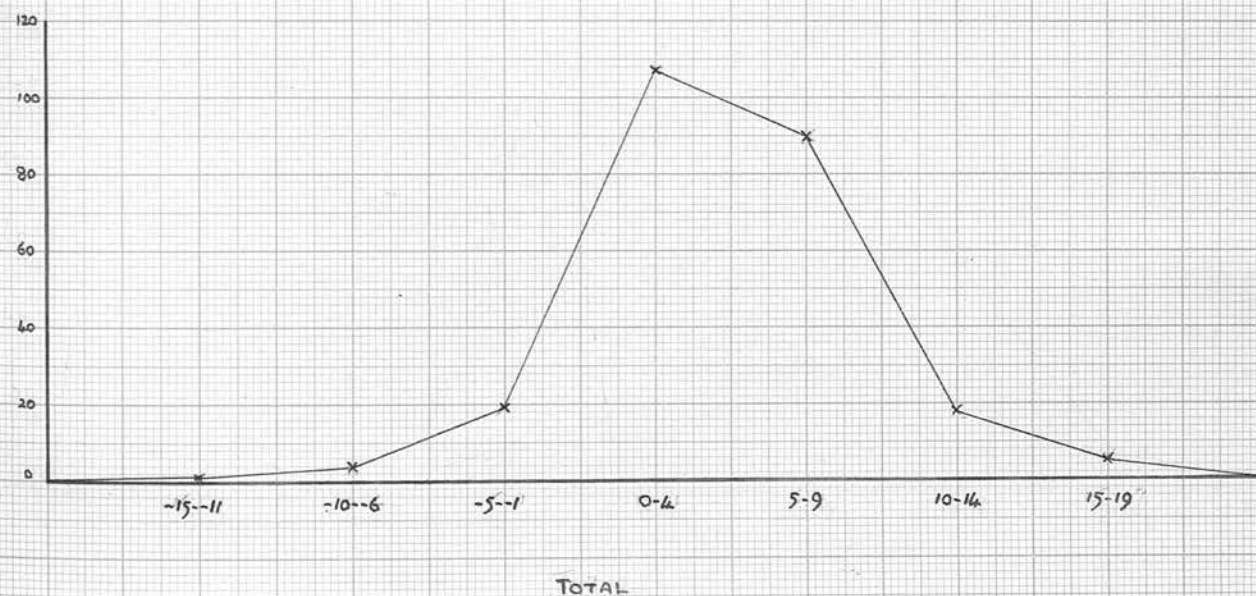
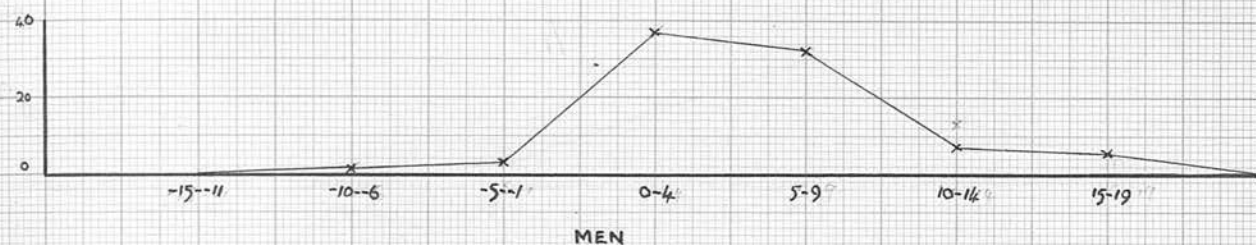
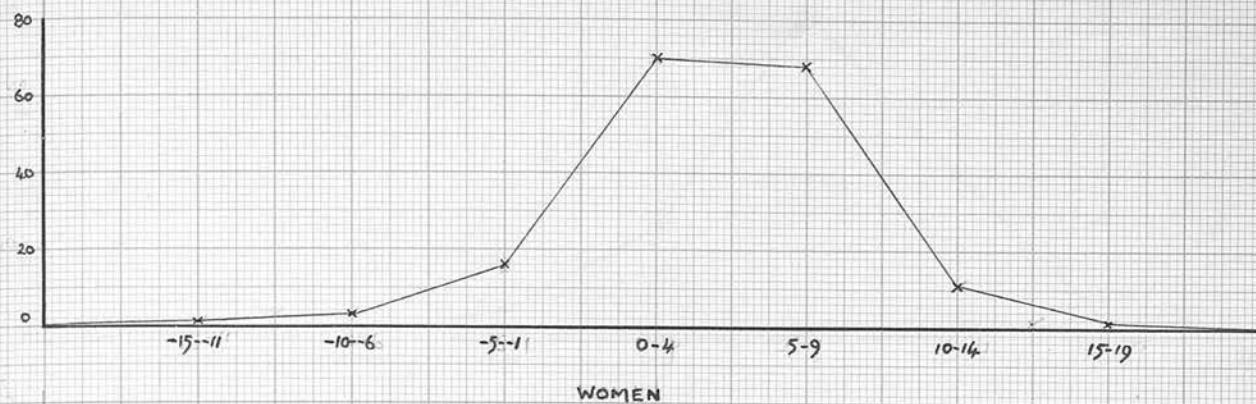




4/ Divergence of Difficulties Ascribed³¹²
to Others from Calculated Sex Means:
Pre 1st Practice Teaching

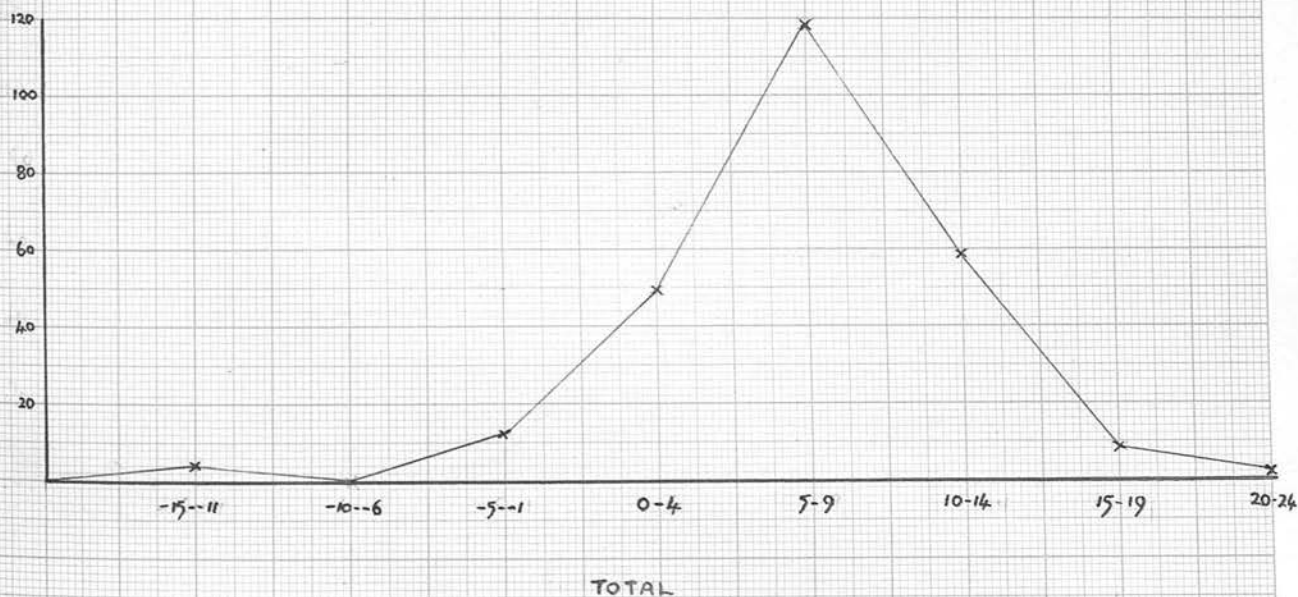
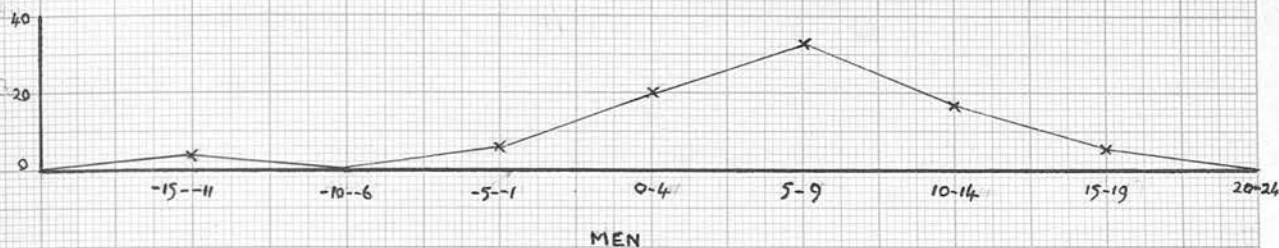
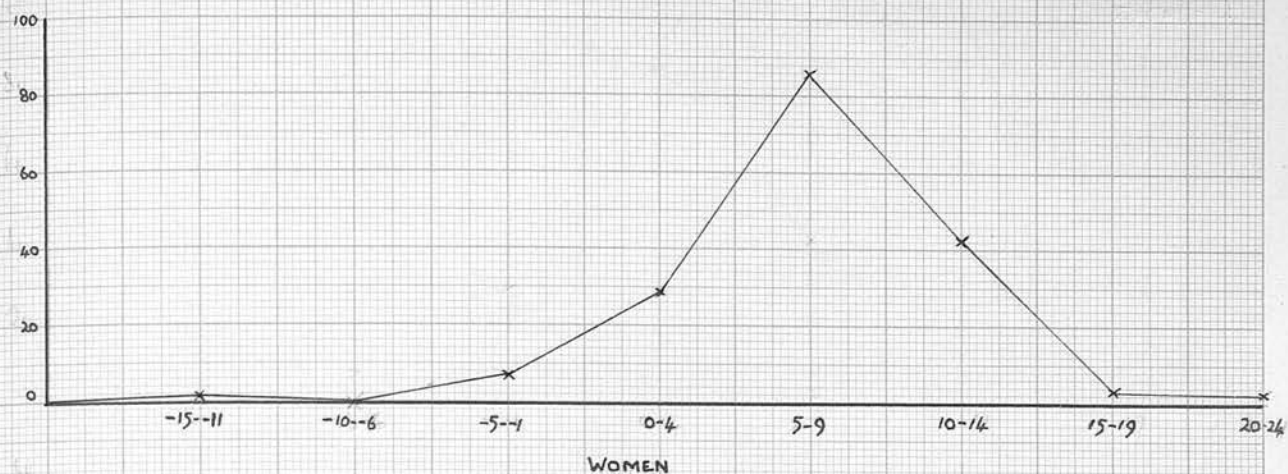


$$\bar{x} = 4.84 \quad \sigma = 4.18$$

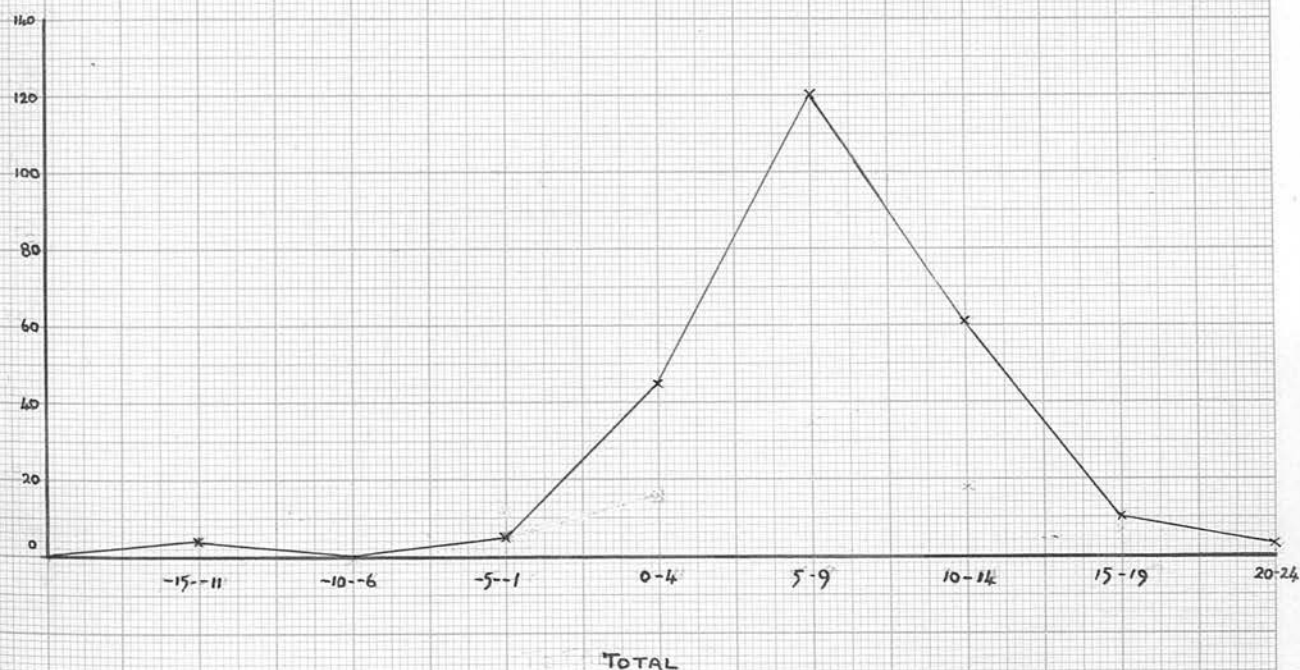
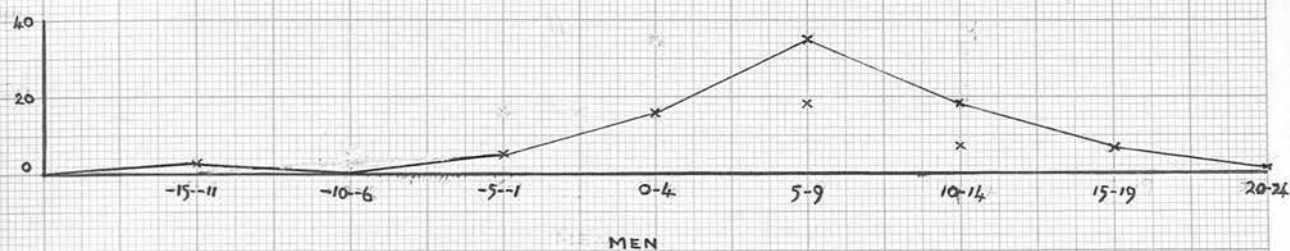
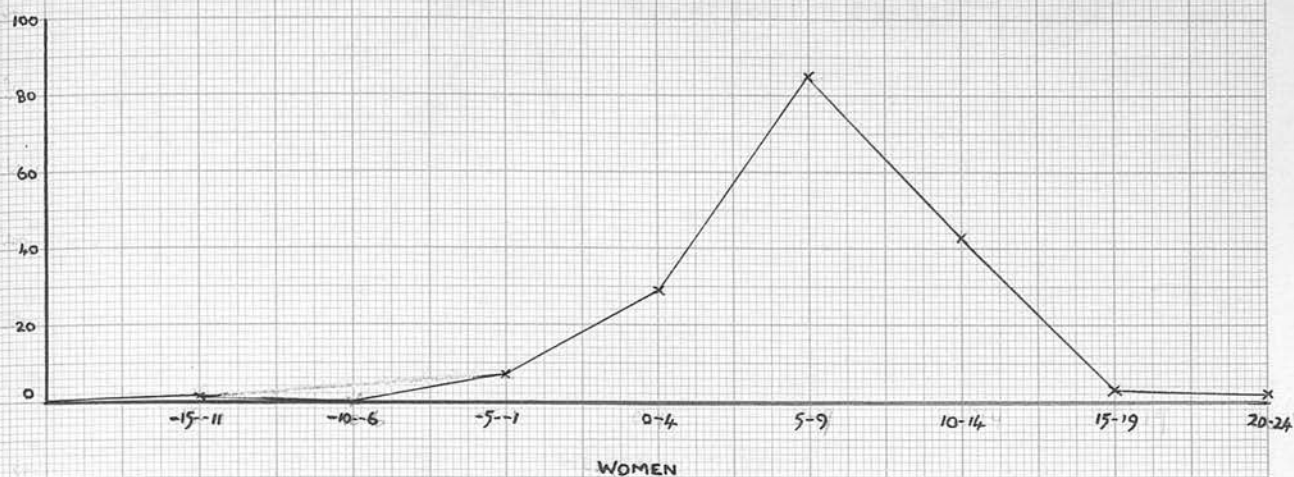


$$\bar{x} = 4.49 \quad \sigma = 4.28$$

49 Divergence of Difficulties Ascribed to 314
Others from Calculated Sex Means:
Post 1st Teaching Practice.

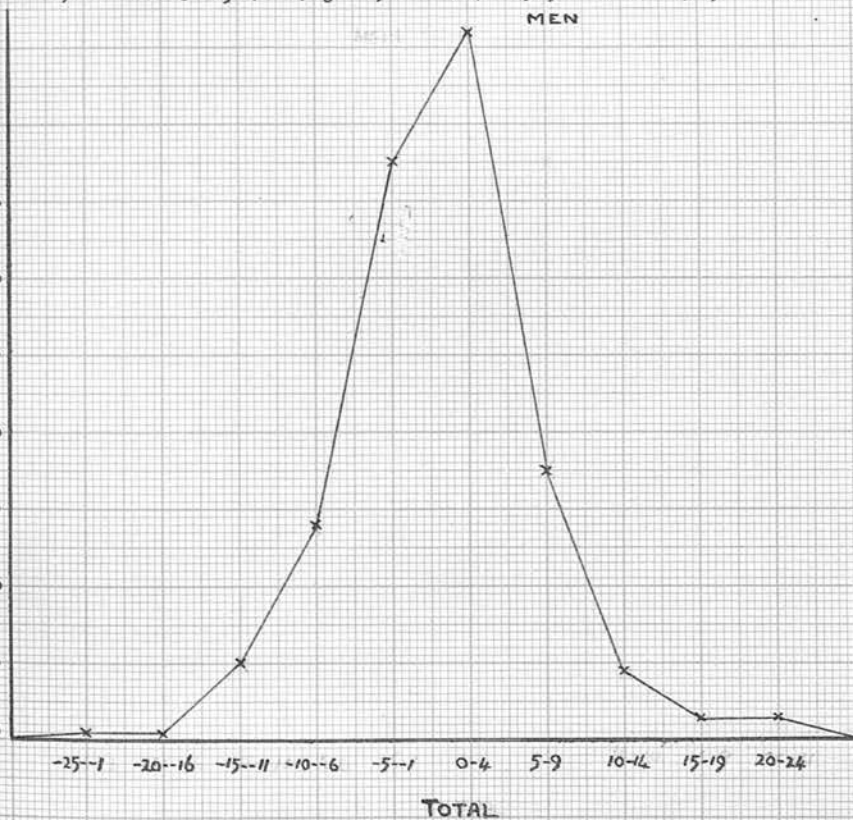
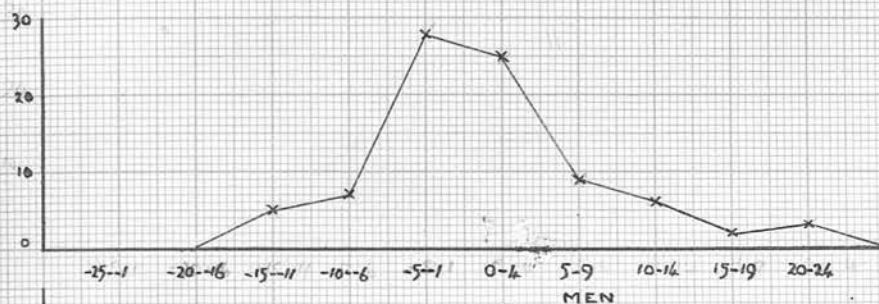
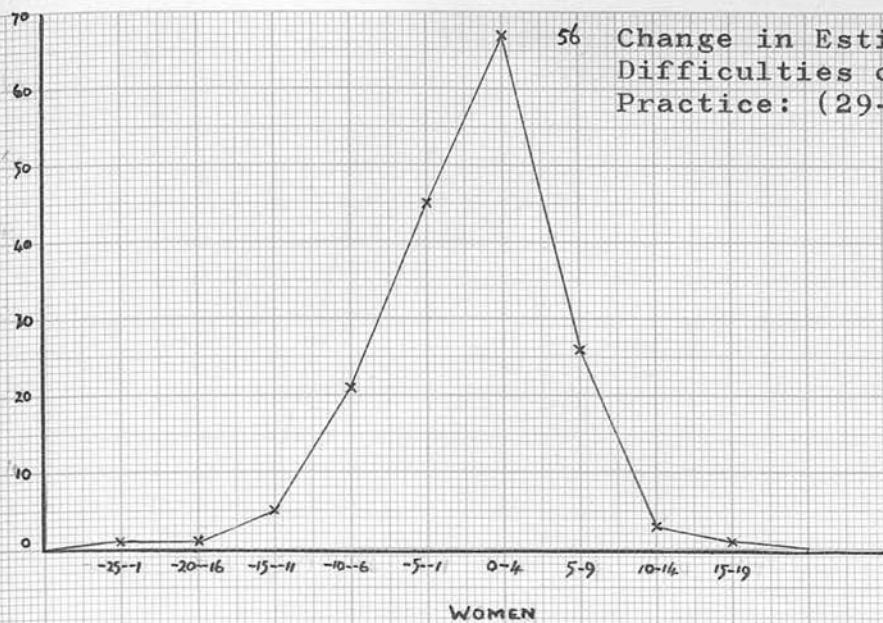


$$\bar{x} = 6.92 \quad \sigma = 5.00$$



$$\bar{x} = 7.27 \quad \sigma = 4.98$$

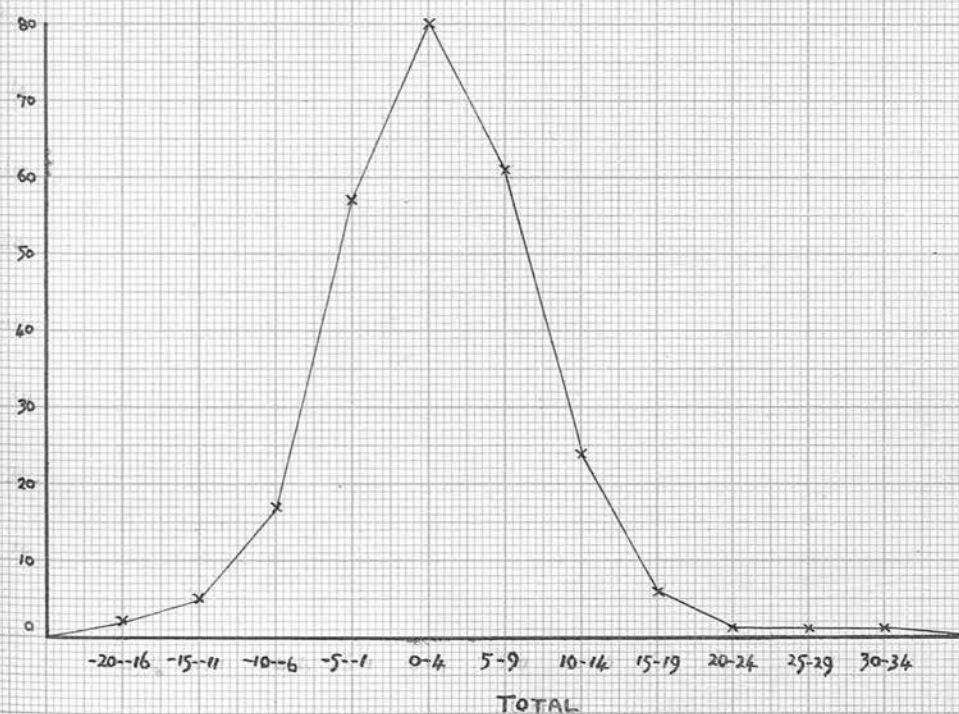
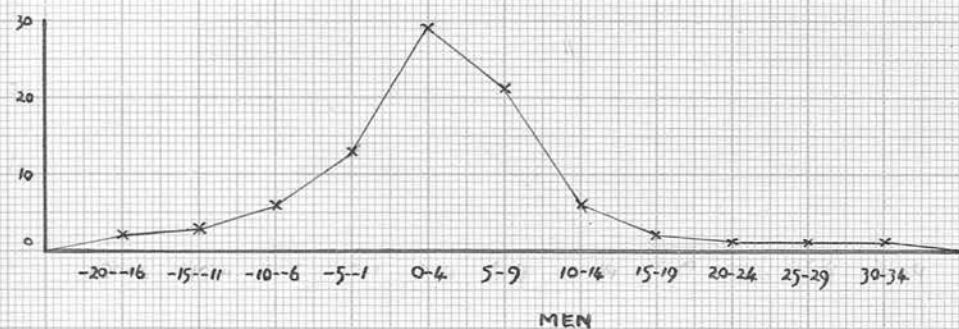
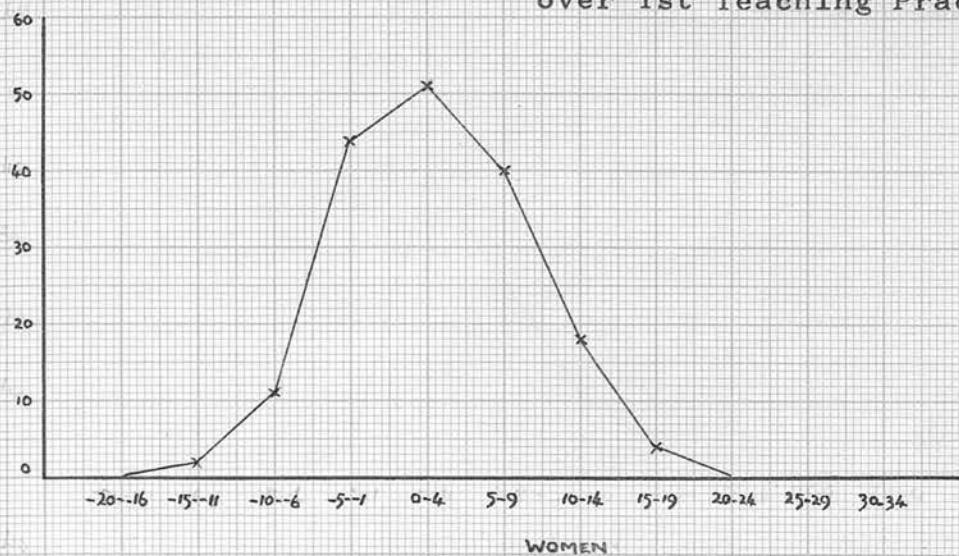
56 Change in Estimate of Others' 316
Difficulties over 1st Teaching
Practice: (29-31)



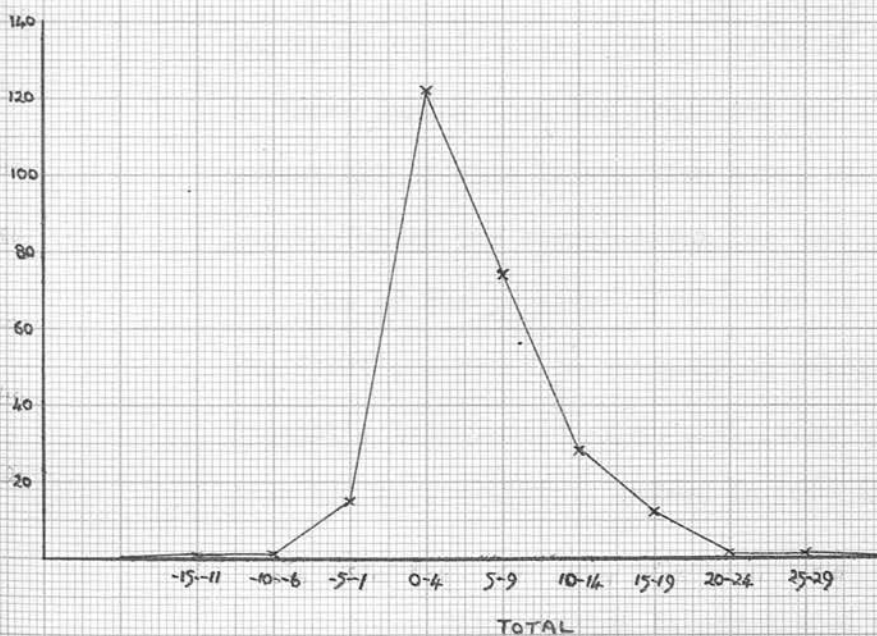
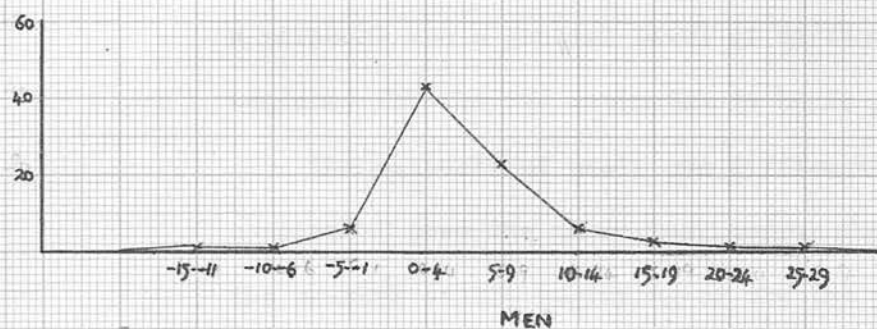
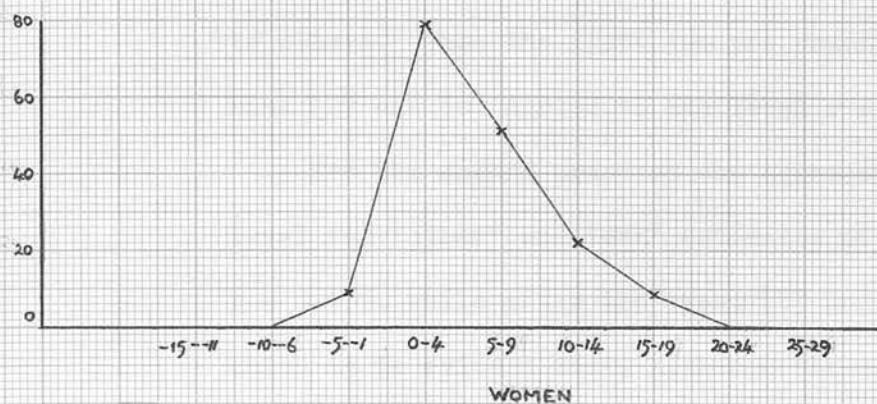
$$\bar{x} = 0.20$$

$$\sigma = 6.26$$

57 Change in Estimate of Own Difficulties over 1st Teaching Practice (30-32)



$$\bar{x} = 2.36 \quad \sigma = 6.73$$



$$\bar{x} = 5.13 \quad \sigma = 5.04$$

At the same time there was general agreement between the levels of difficulty admitted personally and the levels ascribed to others. Thus the first two pre practice estimates of this kind (29 and 30) agreed to the level $r = 0.481$ (sig. at 1%)

For the second practice the agreement was again at the 1% level for 'other' and 'own' estimates of difficulties (59 and 60) $r = 0.439$, while after the event (83 and 84) $r = 0.434$. From which it is evident that, although the agreement is nowhere near unity and hence students are capable of differentiating between a personal and a general level of difficulty, there is a marked tendency for the two estimates to be in general agreement.

The estimate of one's own difficulties also tends to remain consistent over the three year course for the correlation between the measure at the beginning of the 1st year and in the third year is $r = 0.324$ (sig. at 1%). There is also a considerable degree of consistency between levels of difficulty and the changes in these during teaching practices and it is not intended to repeat all of this information here, but only to select the more meaningful of the correlations for consideration.

One of the personality measures to correlate highly with (29) the first pre-practice estimate of others difficulties was (39) Eysenck's Extraversion $r = 0.295$ (sig. at 1%), but this relationship does not appear again. Indeed in (60) the estimate of one's own difficulties before the second teaching practice (17) Cattell's Second Order Introversion is correlated with personally estimated difficulties $r = 0.122$ (sig. at 5%), while it later correlates positively with others difficulties after 2nd practice (83) $r = 0.147$. One other correlation between an Eysenckian measure and the level of difficulty appears in relation to personal difficulty estimates after the second teaching practice (32) and (38) Eysenck's Neuroticism $r = 0.134$ (sig. at 5%). Superficially,

therefore, it appears that there is an occasional non-systematic association between these major factors and the levels of difficulty admitted by students.

A closer examination of results yields more interesting results for (16) Ergic Tension, a questionnaire factor admittedly, correlates positively with every estimate of difficulty, although not all reach the 5% significance level. The following indicates the level of the relationship:

(31)	Others	post	1st	T.P.	$r = 0.131$	sig. at 5%
(32)	Own	"	"	"	$r = 0.161$	sig. at 1%
(59)	Others	pre	2nd	T.P.	$r = 0.191$	sig. at 1%
(60)	Own	"	"	"	$r = 0.223$	sig. at 1%
(83)	Others	"	3rd	"	$r = 0.159$	sig. at 5%

From which it can be seen that the general trend is for high Ergic Tension to be more closely associated with a level of difficulty personally experienced than one ascribed to others.

Turning next to the level of aspiration in relation to levels of difficulty it is interesting to note that prior to the first practice there is a negative, insignificant, correlation appears between the expected grade and (30) personal difficulties ($r = - 0.056$) but a positive association occurs between the former measure and the (29) difficulty level ascribed to others $r = 0.140$ (sig. at 5%). After the practice it was found that those who had expected to do best this time tended to produce lower estimates of others' difficulties (32) $r = - 0.158$ (Sig. at 1%), while correlation with (31) others' difficulties was positive but not significant. It is difficult to see a definite trend as the relationships fluctuate: Thus, by the second teaching practice, students' judgements of others' difficulties do not appear to be significantly related to their judgement of their own performance but the negative sign again appears in relation to (85) the estimate of performance on this practice $r = - 0.247$ (sig. at 1%) as well as in relation to (86) the grade to

which aspired on the final practice $r = - 0.160$ (sig. at 1%). It does appear, therefore, as if there is a trend towards the position which shows that those expecting to do well tend to have relatively fewer difficulties.

To some extent this conclusion is supported by the correlations with teaching grades, although the fluctuation at the second year stage is again apparent :

(32) Own Post 1st Prac	:	(46) 1st year Teaching	$r = - 0.158$ sig. at 5%.
" " " " "		(61) 2nd " "	$r = - 0.141$ sig. at 5%.
" " " " "		(91) 3rd " "	$r = - 0.224$ sig. at 1%.

In relation to the performance in theory the same general pattern with the fluctuation indicated again occurs. For example

(30) Estimate of Own Pre 1st Practice	(89) Education Year 2	$r = - 0.158$ sig. at 5%
" " " " " "	(19) Education Year 1	$r = - 0.130$ sig. at 5%
(32) " " " Post " "	(89) Education Year 2	$r = - 0.138$ sig. at 5%
(59) " " Others Pre 2nd "	(88) Mathematics Year 2	$r = - 0.135$ sig. at 5%

An exception to the pattern appears to be English performance which although negatively correlated (20 English Year I $r = - 0.212$) with (84) personal difficulties, after the second practice correlates positively with the personal estimate prior to that practice. Since the English scores are common to both, however, it is clear that the fluctuation is in the estimates of difficulties.

The fluctuation between the various measures of social structure is considerable and no pattern emerges from a scrutiny of the relationships, except that males appear in one or other relationships more often on the positive than negative sides, suggesting a tendency for the males to encounter more difficulties as indicated by the earlier tests between the sexes.

It is evident, therefore, that levels of difficulty fluctuate considerably tending to follow a reduction pattern from a pre-practice to a post-practice position and, although there are fluctuations, there is a general tendency for higher performance to be associated with lower levels of difficulty and for students themselves to be subjectively aware of these trends, in that they tend to give lower levels of difficulty where they have a higher performance expectancy.

This set of predictor variables does support the initial general hypothesis and the two others previously indicated in that those with the highest difficulty levels tend to perform worst in theory and in practice.

Social Structure Questionnaire: Variables 65 - 82 inclusive

This instrument is used to test the fourth hypothesis as well as those relating to extraversion.

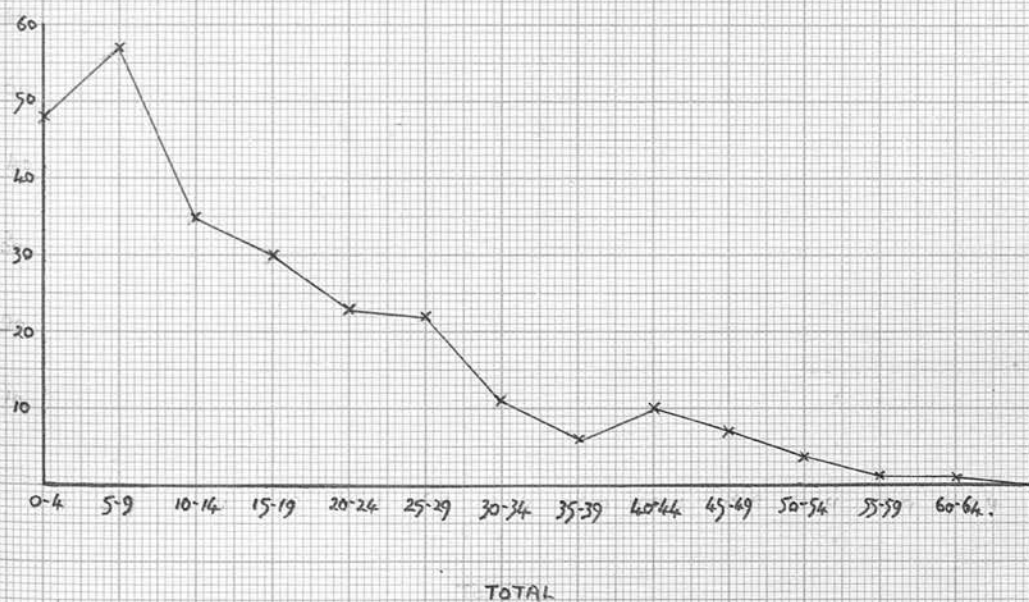
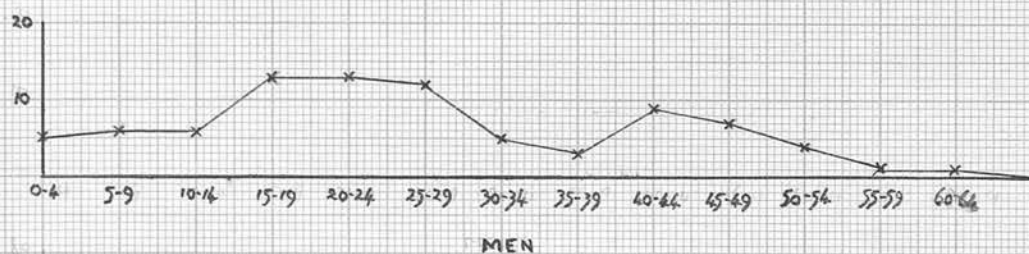
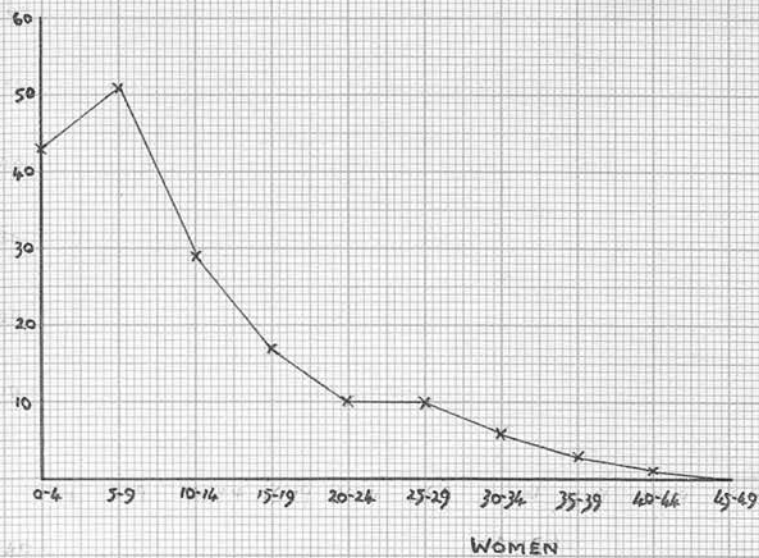
It will be recalled that the students were supplied with lists of all the members of their year group, and they were then asked to indicate those they claimed to know well and very well. This information is incidental to the main enquiry and only such portions as are relevant to it are reproduced here. It was found that on the average the students indicated 54 of their fellows in these capacities taken together, but the range of variation is wide (S.D. = 29.98) and extends from those who name only one or two to those naming over 130. There was a marked tendency for the men to name more of their sex as being known well and very well as compared with the women who in turn selected more of their sex in these categories :

These differences were significant at the 1% level in each instance.

The correlations with (73) the number of students claimed to be known well and the pattern of actual choices received (82), agree in general $r = 0.379$ (sig. at 1%) but permit considerable scope for variation. There is a considerable amount of agreement in relation to the other variables as the following table of personality variables illustrates :

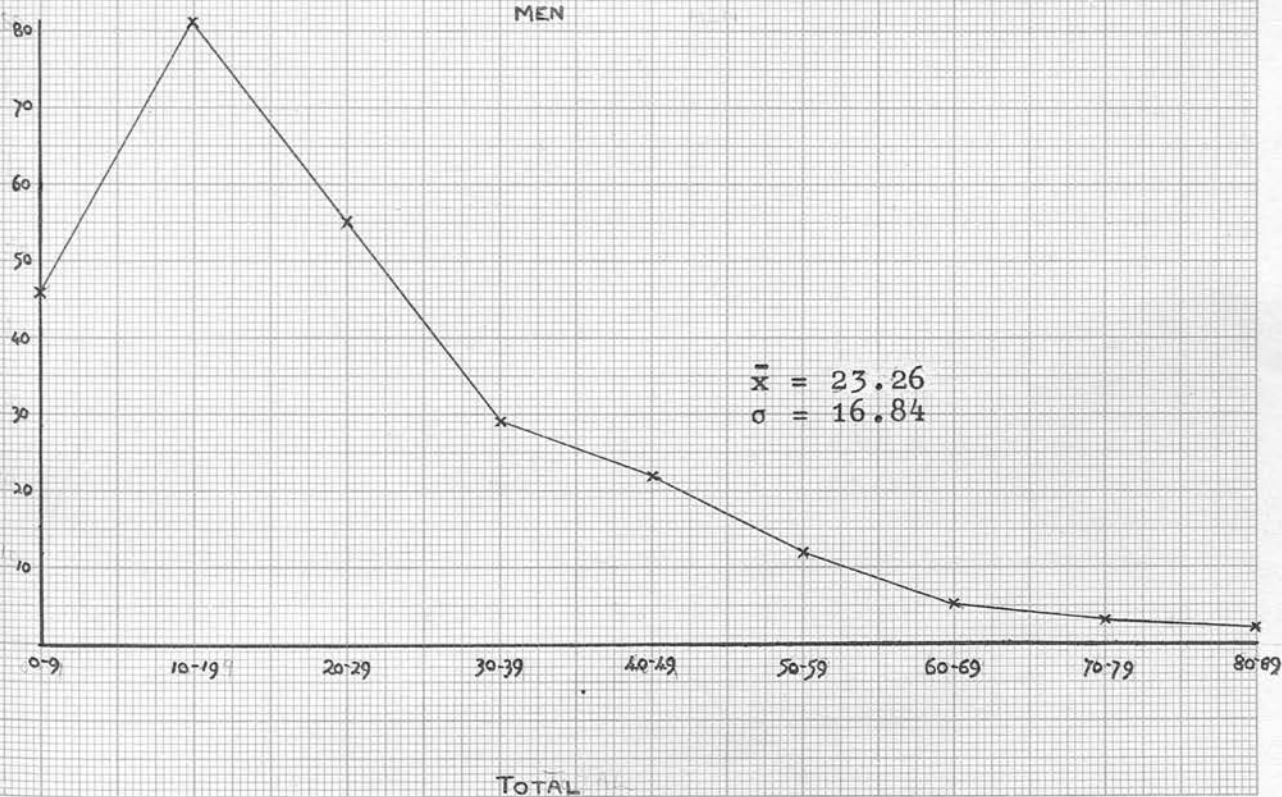
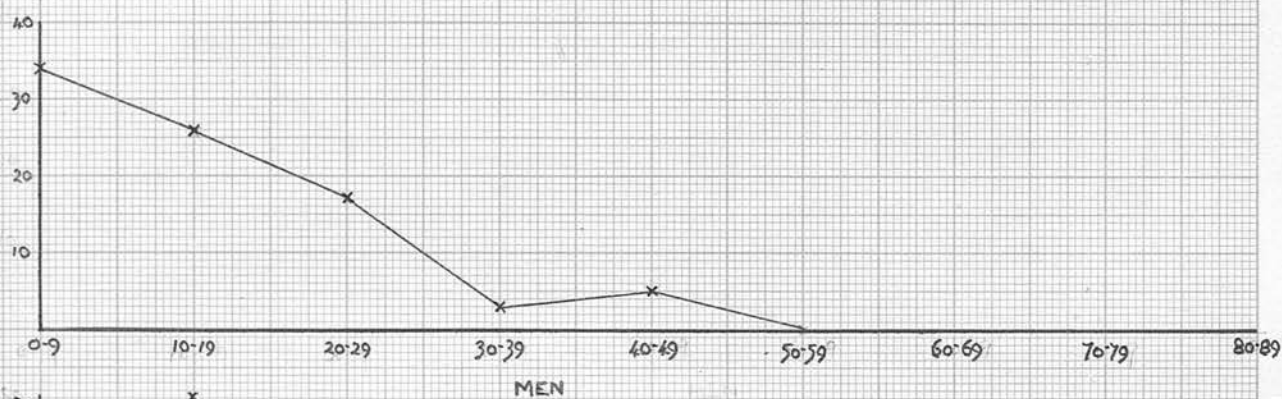
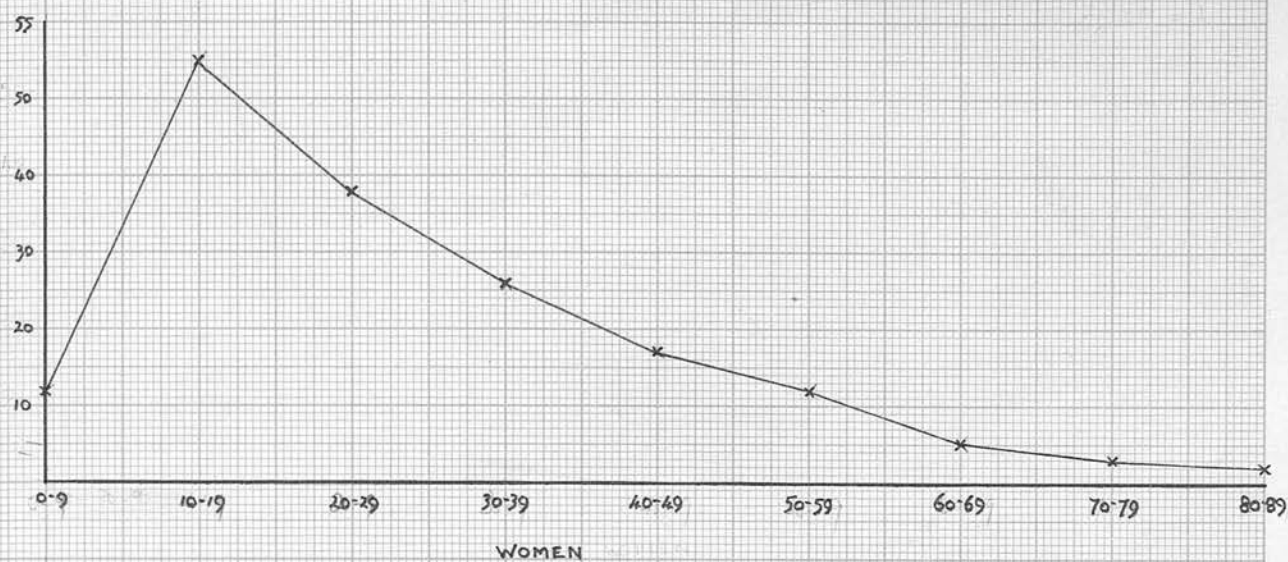
	(73)	Sig.	(82)	Sig.
(14) Self /Group dependency	- 0.253	1%	- 0.281	1%
(17) Cattell's Introversion	- 0.193	1%	- 0.133	5%
(39) Eysenck's Extraversion	0.210	1%	0.108	N.S.
(51) Pitts E.M. Scale	- 0.157	5%	- 0.168-	1%
(52) Pitts E.M. Scale	- 0.202	1%	- 0.219	1%
(10) Protension	- 0.174	1%	- 0.172	1%

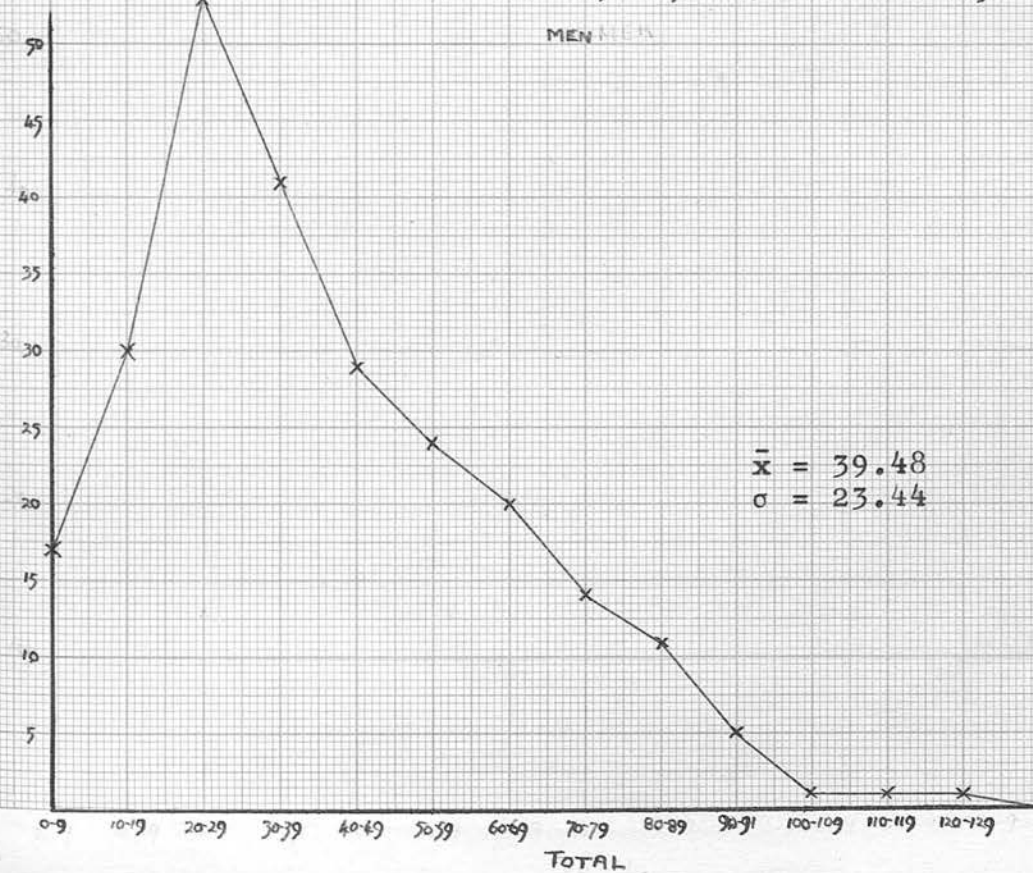
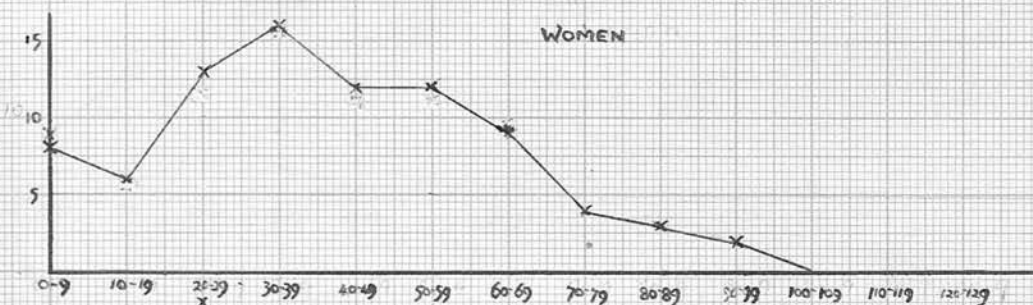
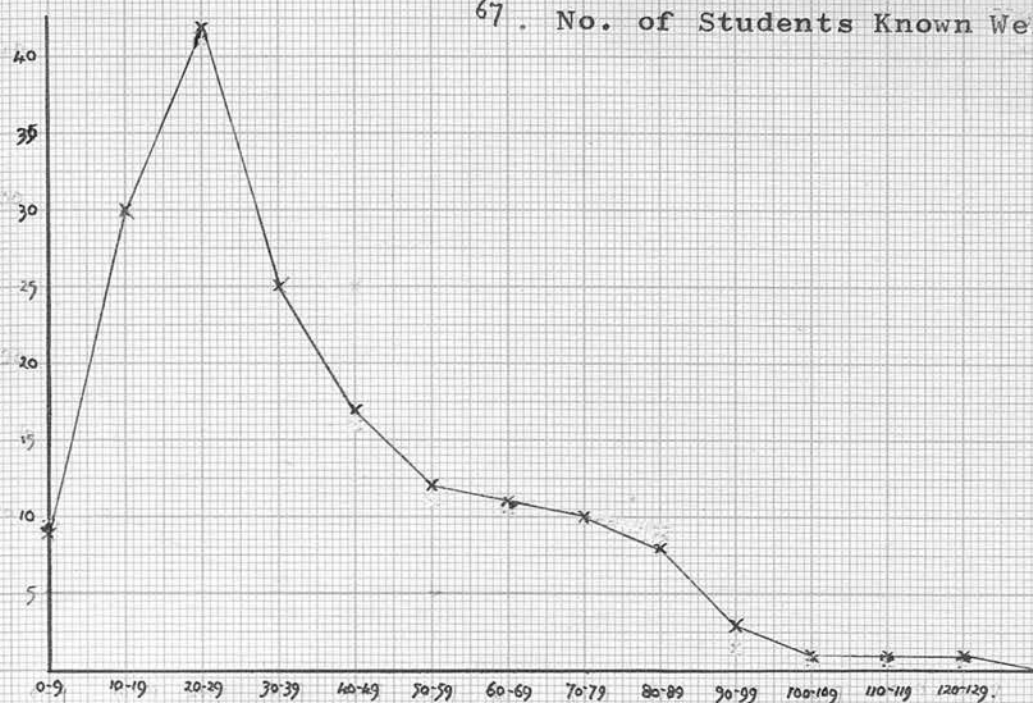
The clear indication is that the self-contained, mature, independent individual tends to make and receive fewer choices in relation to his contemporaries. This is an important finding in that those in authority tend to have a high regard for such individuals rather than the more exhibitionist, group dependent ones. Here the



$$\bar{x} = 16.28$$

$$\sigma = 13.76$$



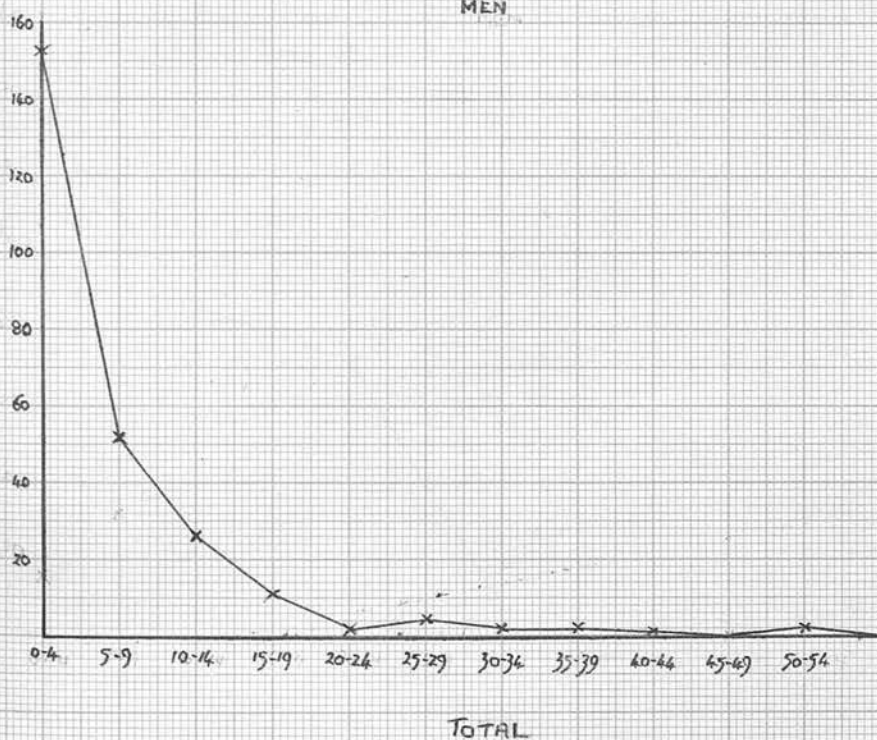
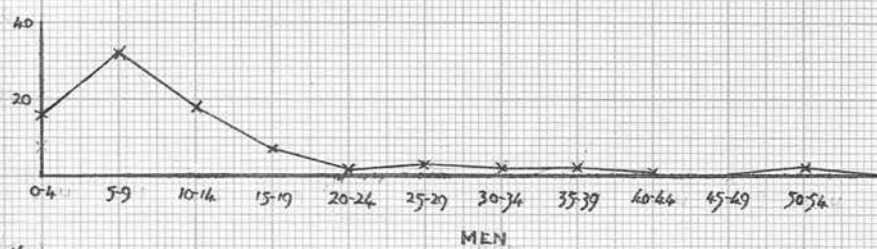
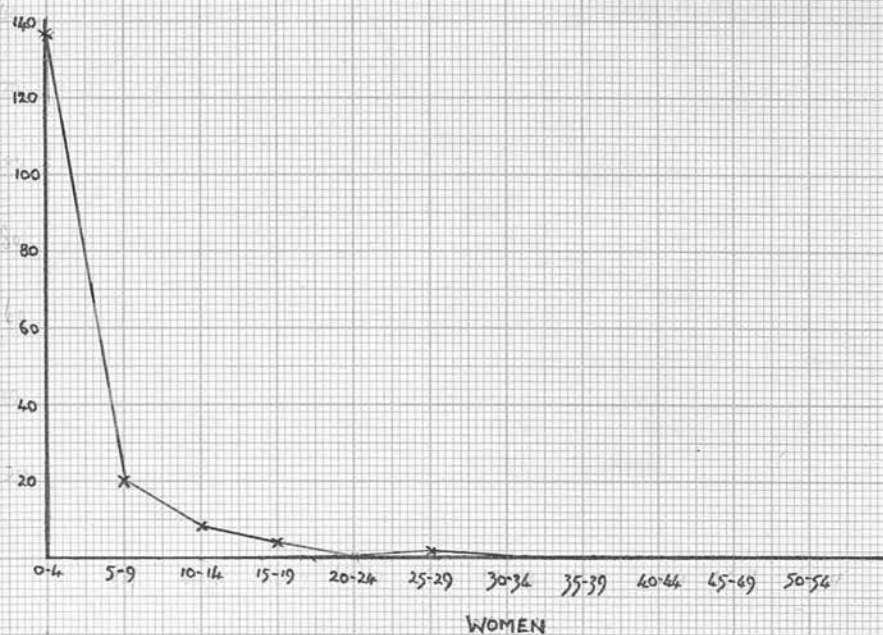


$$\bar{x} = 39.48$$

$$\sigma = 23.44$$

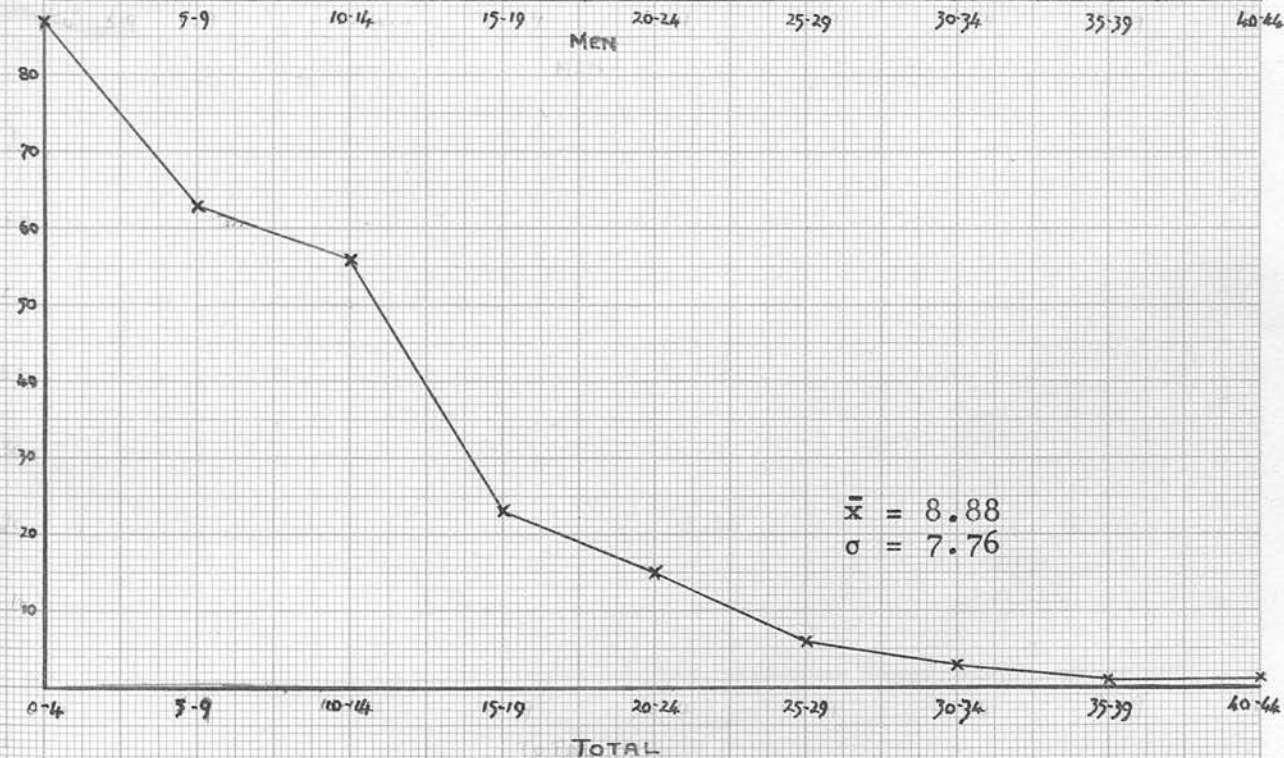
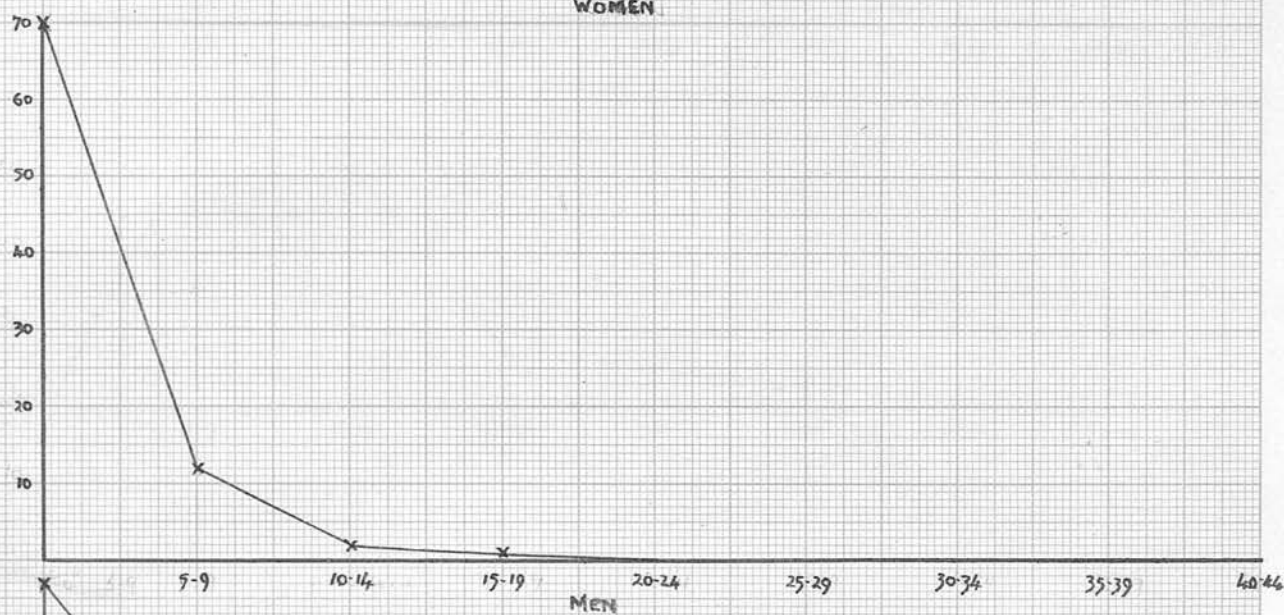
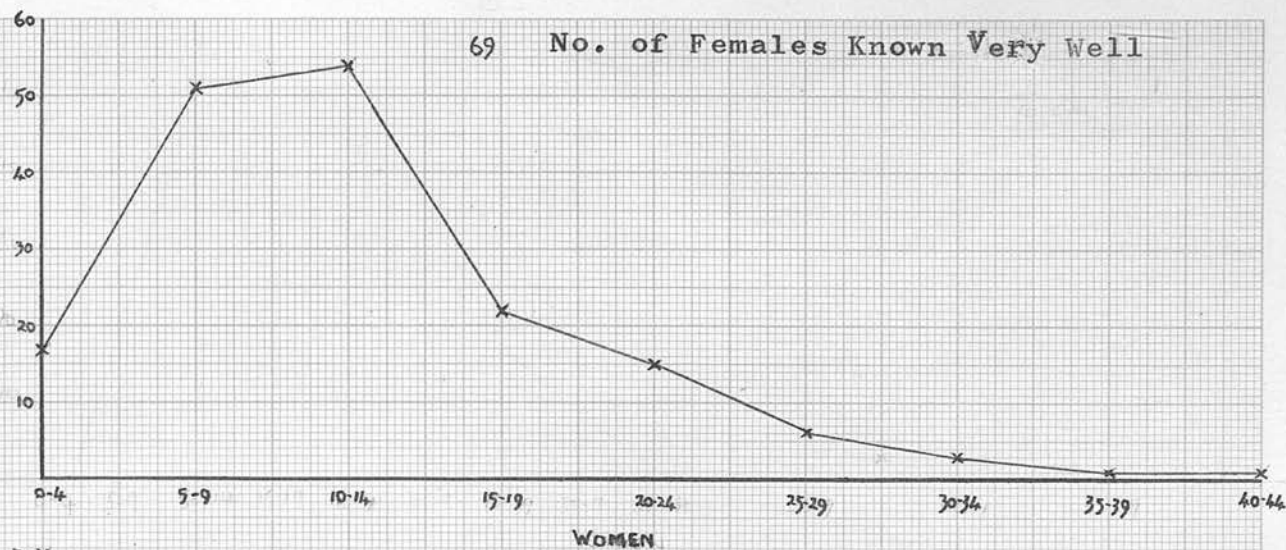
TOTAL

68 No. of Males Known Very Well

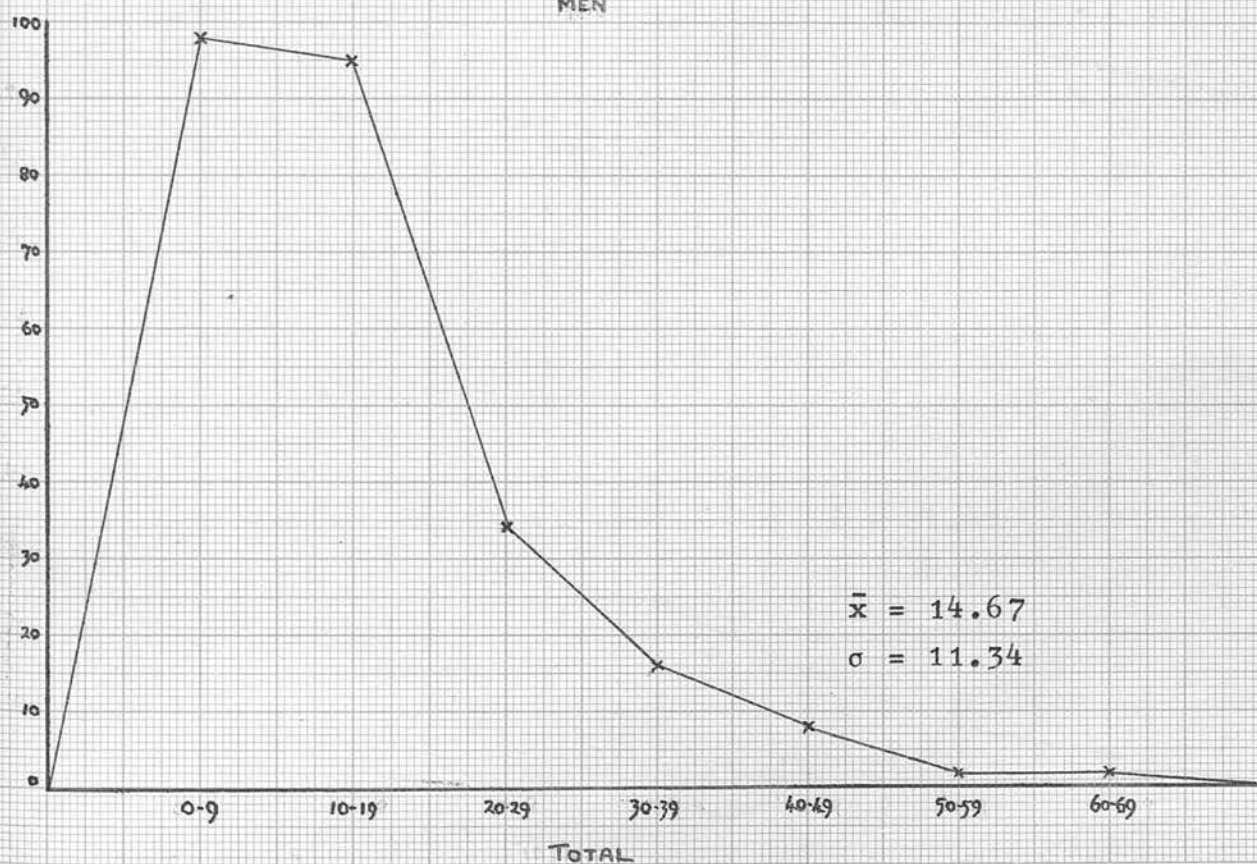
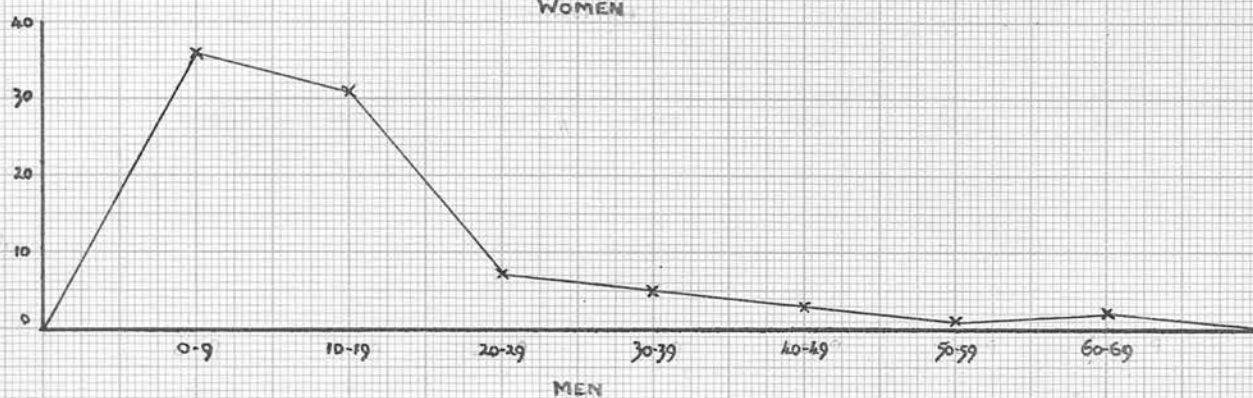
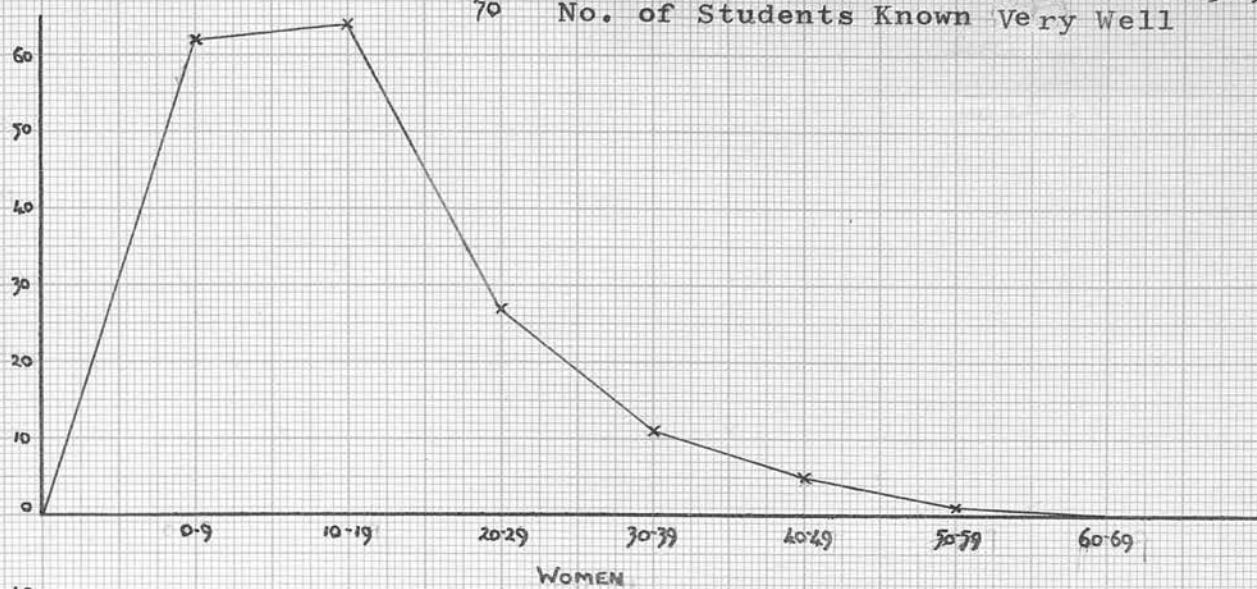


$$\bar{x} = 5.53 \quad \sigma = 8.18$$

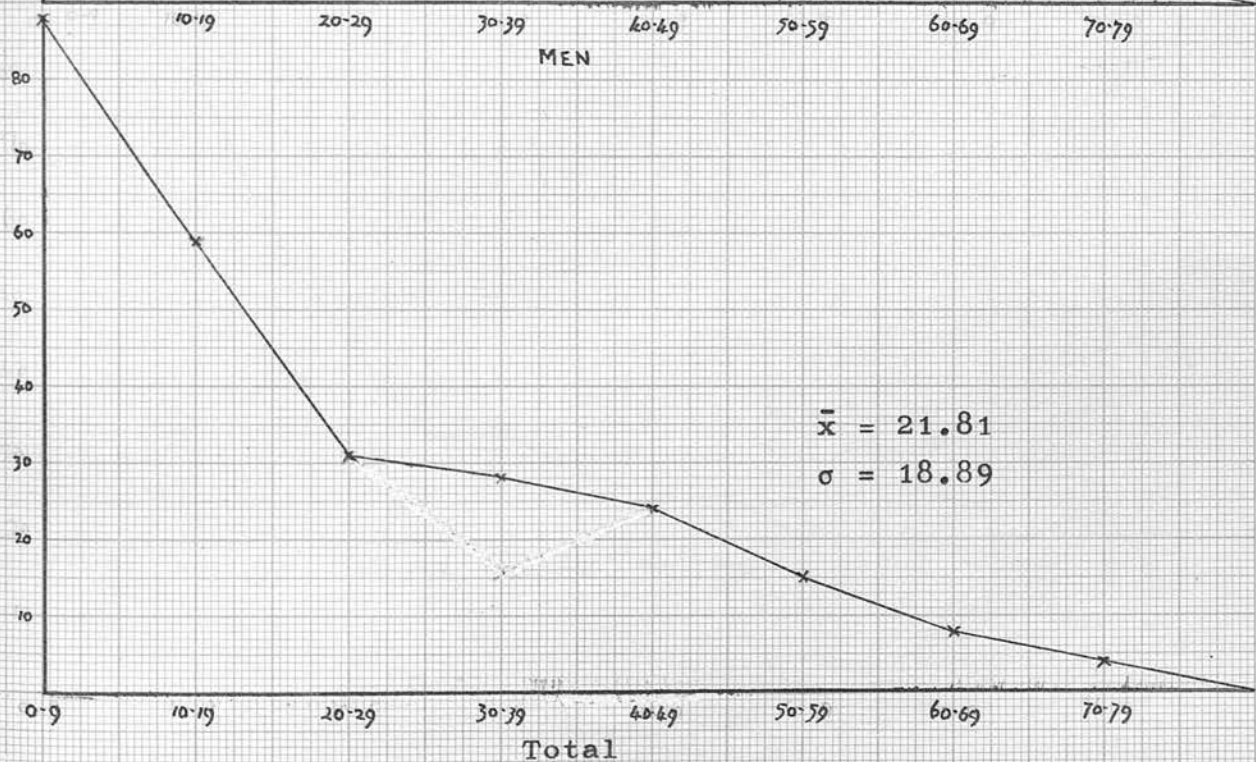
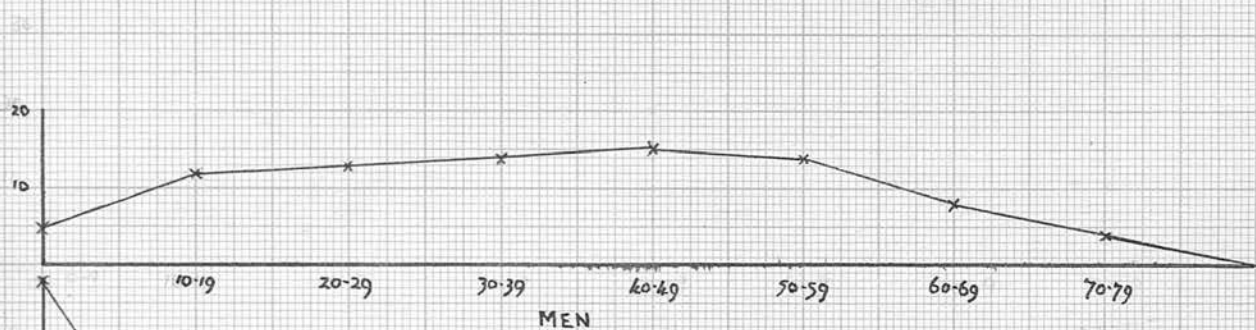
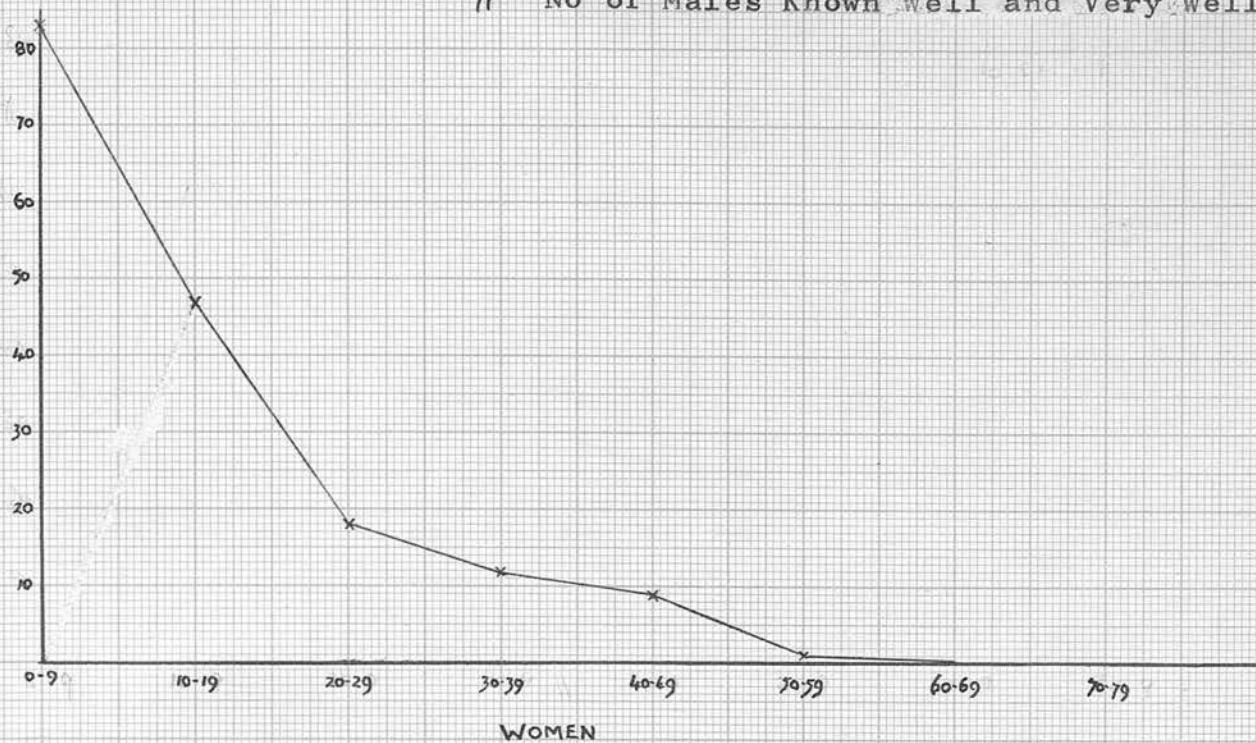
69 No. of Females Known Very Well



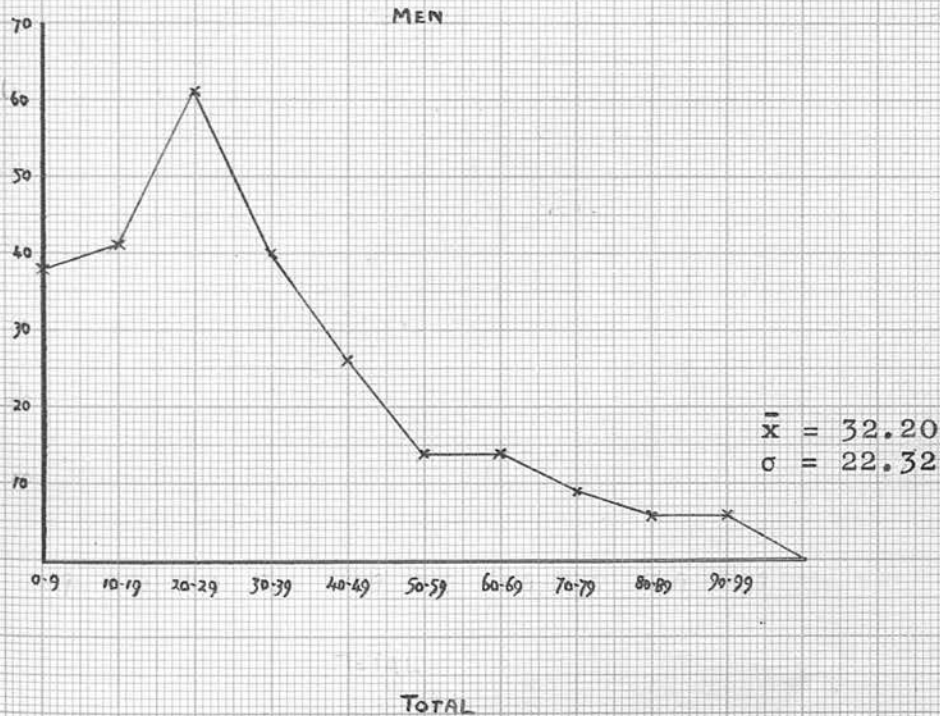
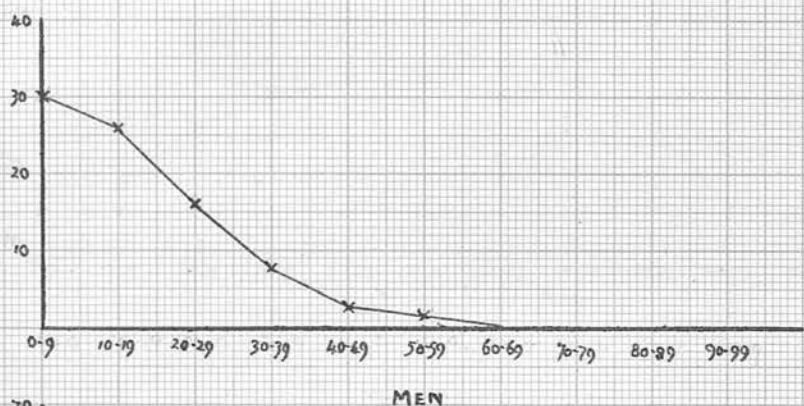
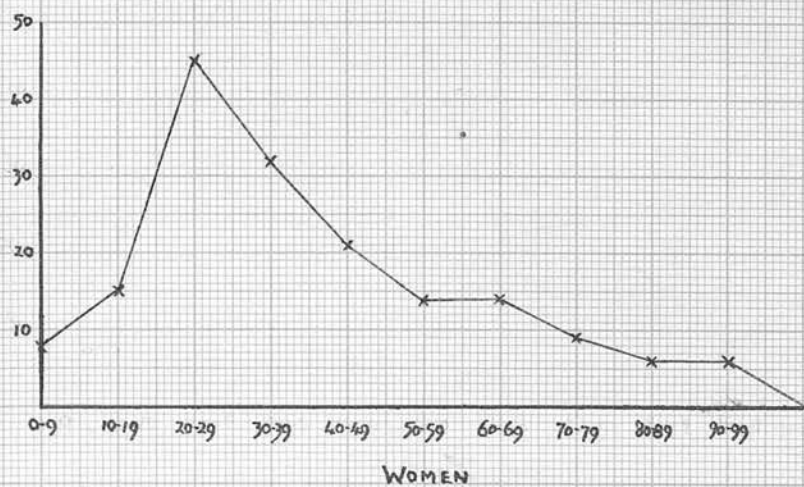
70 No. of Students Known Very Well



71 No of Males Known Well and Very Well

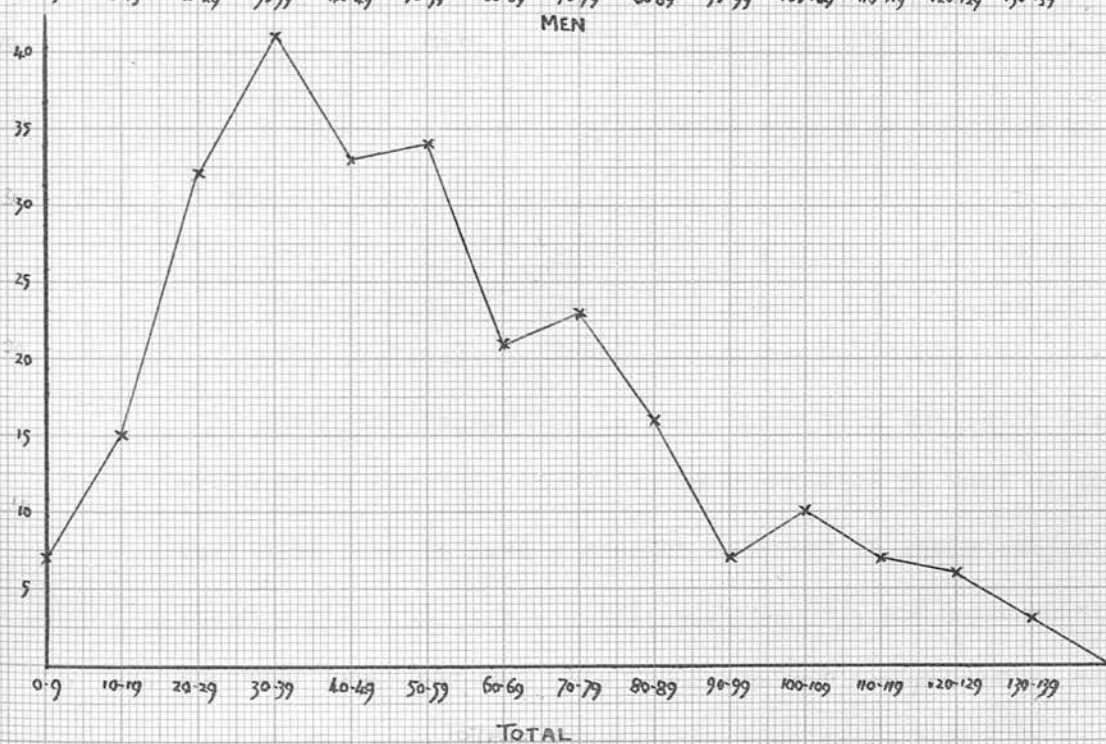
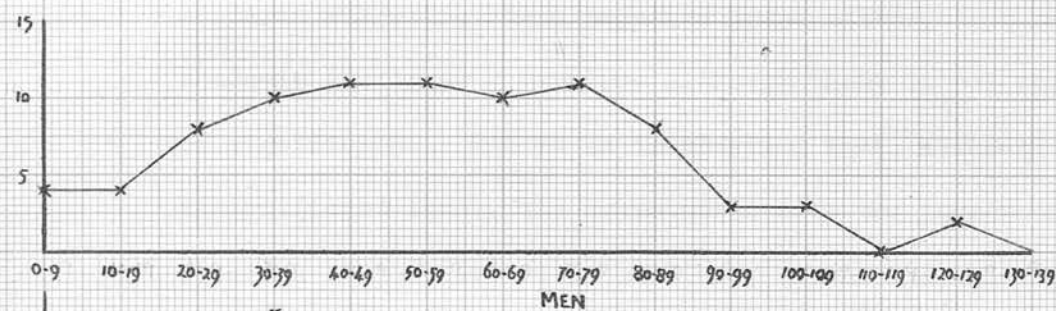
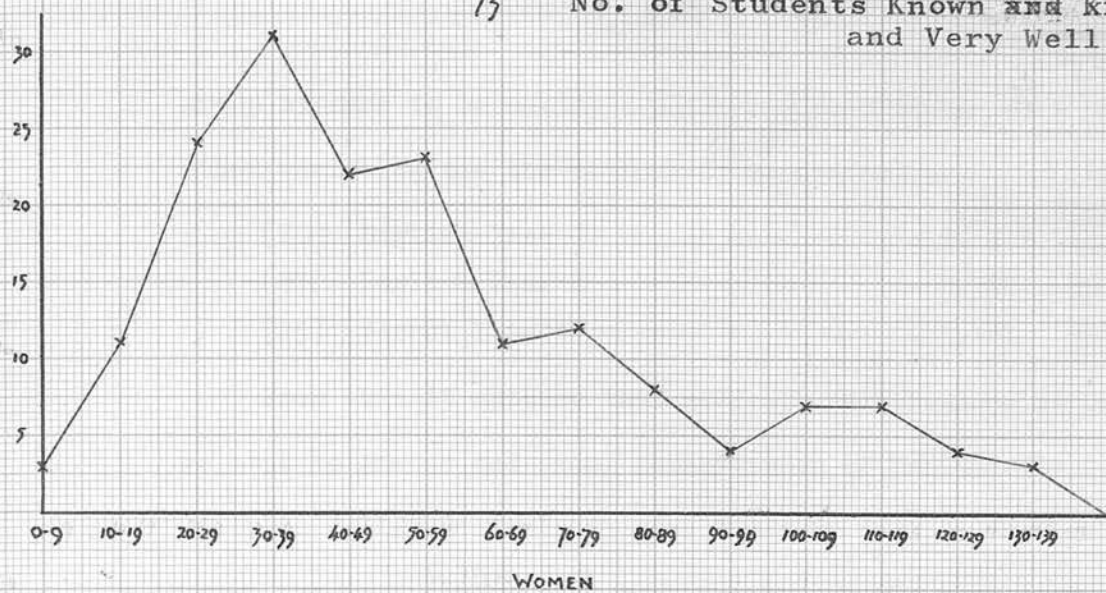


72 No. of Females Known Well and Very Well.



332

73 No. of Students Known and Know Well
and Very Well



$$\bar{x} = 53.94 \quad \sigma = 29.87$$

group appears to be making a different selection. On a number of other variables too the pattern is consistent :

	(73)	Sig.	(82)	Sig.
(20) English Year I	- 0.182	1%	-0.169	1%
(87) English Year 2	- 0.197	1%	-0.181	1%
(23) Verbal Intelligence	- 0.127	5%	-0.174	1%

From this it appears that academic performances is usually related to status and group cohesiveness of individuals i.e. the more of their fellow-students who are known by them, or to whom they are known, the less intelligent they appear and the worse they perform in academic subjects. This negative trend extends to a number of other academic performance measures although these do not reach the 5% level of significance. But it is interesting that, although at an insignificant level, the correlation with the number of choices received is positive with the first, second and third year practical teaching performances.

A number of other coefficients appear in relation to the number of choices made (82) :

(27) M.T.A.I.	Anti.	$r = 0.210$	sig. at 1%
(26) M.T.A.I.	Pro.	$r = - 0.253$	sig. at 1%
(28) M.T.A.I.	Final	$r = - 0.233$	sig. at 1%

Again the suggestion is that those with the least favourable attitude to teaching appear to be known well by most of their fellows ; they also tend to have a greater interest in their subjects than in their pupils (53) $r = - 0.121$ (sig. at 5%), and have relatively few Advanced level passes, (34) G.C.E. 'A's $r = 0.160$ (sig. at 5%).

On the other hand, it appears that those known by most of their colleagues tend to impress most at the (35) Interview $r = 0.146$: they also tend to be Welsh (58) $r = 0.206$ (sig. at 1%) and in spite of the negative correlation with verbal intelligence, correlate positively with (21) Non-verbal intelligence $r = 0.148$ (sig. at 5%).

Those who make the largest claims (73) also tend towards (5) surgency $r = 0.141$ (sig. at 5%), to be young (55) Age $r = - 0.175$

sig. at 5%), to have the largest goal discrepancies (63, $r = 0.175$ sig. at 1%), and to underestimate their own difficulties as compared with those ascribed to others, as well as those of others as given by them (36, 83 and 84).

It, therefore, appears that the pattern of choices derived from the social structure questionnaire is related significantly to the two personality measures of introversion - extraversion employed in the study, being more highly related to choices given by the subjects, than received by them, and these in turn are generally inversely related to academic performance and attitudes to teaching; the actual relation with teaching performance, though positive fails to reach the lower accepted level of significance. These results, therefore, lend some support for the hypotheses relating to the performance in theory and practice of those scoring high on introversion and on extraversion respectively as well as the fourth hypothesis that measures would be devised for identifying areas of personality related to successful performances in teacher training.

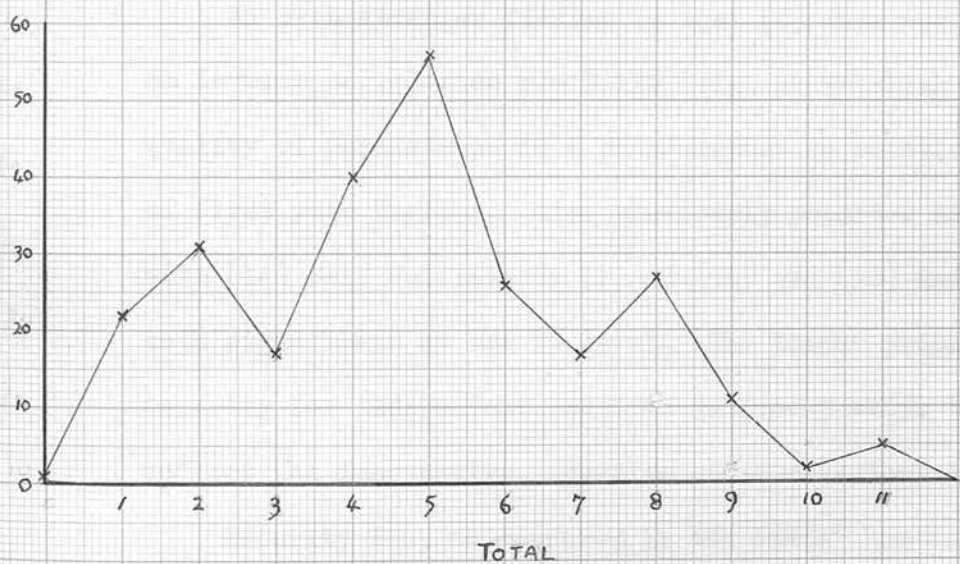
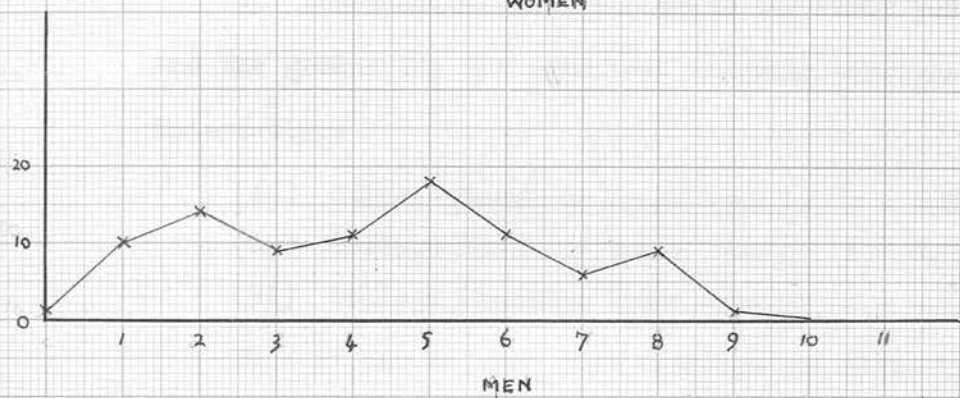
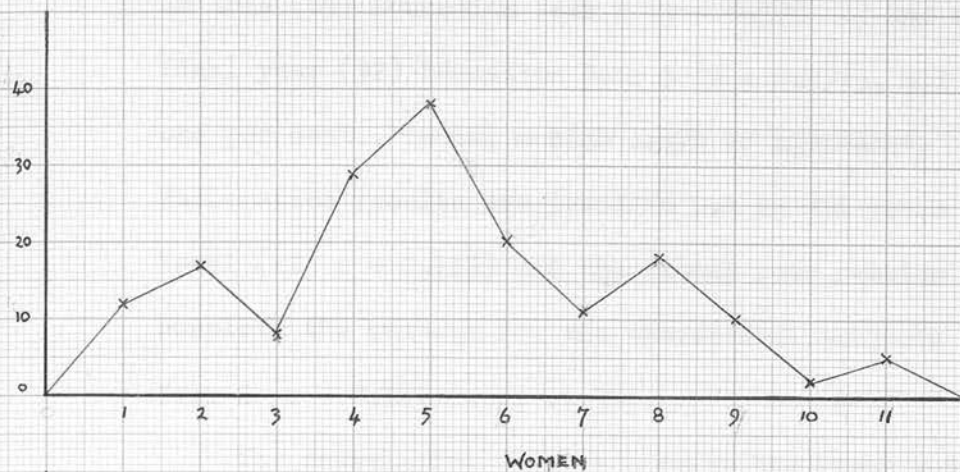
2. The Criterion Variables (See P.13)Variable 20. English Year I

The results of the first year English examinations are recorded on the eleven point scale D to A+ in accordance with the University of Wales School of Education examination regulations with D representing 40% a borderline failure, A+ = 90% and with the exception of D+, which at 42% represents a low pass, all the other grades are at 5% intervals. On occasion tutors use E and F to signify positions below D but since these are rarely used throughout this study, such grades have been grouped together and classified at the lowest point of the scale. In this case, the range of scores from the grades was plotted with the one extreme score but was scored 1 - 11 for the analysis. The mean obtained for the group was 4.86 and that for the women was 5.188 which is significantly above that of the men at 4.200, $t = 3.183$ (sig. at 1%).

As one might expect from the pattern of correlations seen in the case of first year Education, by far the highest correlation with the present criterion measure of performance was the (87) Second Year English result $r = 0.663$. Also significant beyond one per cent. are (24) Cattell's Vocabulary Items on the Verbal Intelligence test, $r = 0.404$, (25) Cattell's Verbal Intelligence Test as a whole $r = 0.393$ and (34) the Number of A level passes in G.C.E. $r = 0.309$. The other two measures of intelligence are also significantly related to the criterion at the five per cent. level

- | | |
|--|-------------|
| (21) Cattell's Non Verbal Intelligence | $r = 0.150$ |
| (2) Cattell's 16 P.F. Factor B. | $r = 0.131$ |

Thus, it is abundantly clear that the intellectual element in personality looms large in the first year English performance of the students and that their performance at Advanced level and in other college academic subjects is also indicative. The ordinary level results are also positively correlated with this criterion, but do not reach the 5% level of significance. Mention has already been made



$$\bar{x} = 4.86 \quad \sigma = 2.44$$

of (19) Education Year I ($r = 0.215$) and the second year results in this (89) Education Year 2 ($r = 0.170$) and also that in the final year (92) Education Year 3 ($r = 0.277$), all significant at one per cent., reveal a high level of agreement. The first year Mathematics results are positive but do not reach the significance level (22) $r = 0.112$) but the second year results in the subject complete the pattern for the theoretical subjects (88) Mathematics Year 2 $r = 0.145$ (sig. at 5%).

The correlation pattern between the first year English results and the grades for the practical teaching performance are singularly interesting:

- (46) College Teaching Grade Year 1: $r = 0.046$ NS.
- (61) College Teaching Grade Year 2: $r = 0.028$ NS.
- (91) College Teaching Grade Year 3: $r = 0.279$ sig. at 1%

Thus it can be seen that although the first two correlations would have occurred by chance, more often than 5% of trials, there is a trend from an inverse, through a low positive to a highly significant positive relationship.

An even stranger finding is that (6) Superego Strength produces an inverse correlation $r = 0.132$ (sig. at 5%) which suggests that the quality of persistence is a disadvantage in relation to the criterion of first year English. Also previously reported is the correlation with (14) Self Sufficiency ($r = 0.296$) and (10) Autia ($r = 0.231$) both significant at the 1% level. The former probably represents a capacity for independent critical judgement while the latter may well reflect the imaginative, creative and theoretical interests.

Maturity too, as measured by the Pitts' Emotional Maturity Scale (52) M/M+1: $r = 0.279$ and (51) M = II, $r = 0.233$ is significantly correlated with the criterion (both at 1%), while the Minnesota Teaching Attitude Inventory yields three measures which correlate at this same level:

- (26) M.T.A.I. Pro Scores $r = 0.270$.
 (28) " Final " $r = 0.262$.
 (27) " Anti " $r = 0.247$.

In this case the probability is that proficiency in English enables subjects to select the necessary responses to score well on the M.T.A.I. rather than the reverse.

A particular feature of the pattern of correlations with the present criterion variable is that both a high level of Aspiration and a high level of difficulty are positively and significantly associated with it as follows:

- (41) Theory Estimate of Final Pre. 1st Practice $r = 0.229$ sig. at 1%
 (84) Estimate of Own difficulties after 2nd " $r = 0.212$ " " "
 (59) " " Others " before 2nd " $r = 0.169$ " " "
 (83) " " " " after 2nd " $r = 0.163$ " " "
 (60) " " Own " before 2nd " $r = 0.126$ " " 5%

The judgement of (44) the first year teaching performance is also correlated with English at this lower level of significance $r = 0.123$. The self-awareness that this suggests is also found in the correlation with (39) Eysenck's Extraversion $r = 0.174$ (sig. at 1%). At the same time, even more than in the case of Education already considered, twelve measures from the Social Structure Questionnaire are significantly and negatively correlated with English at Year I, ten of them at the 1% level. Thus the high performance subjects tend to have a lower social status in terms of the number of choices they receive and also of the circle of acquaintances they claim, as compared with those whose performance is at a lower level in the first year.

When this factor is taken as the criterion and all other measures are sorted on it so that the scores of the 10% most stable are compared with those of the least stable 10%, no significant differences appeared on any of the performance measures. Indeed, only (16) Ergic Tension was so differentiated with $t = 2.379$ (sig. at 5%)

Thus this criterion measure tends to support the initial general hypothesis and to support that relating to emotional maturity and students' self-estimates.

Variable 87. English Year 2 (Final)

The general English course extends over only two years and is completed by examination, the results of which are entered on the record cards after the scripts have been marked out of a 100. The group mean obtained was 53.74 s.d. 10.50 with that of the women 55.182 significantly (at 1%) above that of the men at 50.859.

Again the academic grouping is seen in relation to the students' performance in this English result and their other subjects:-

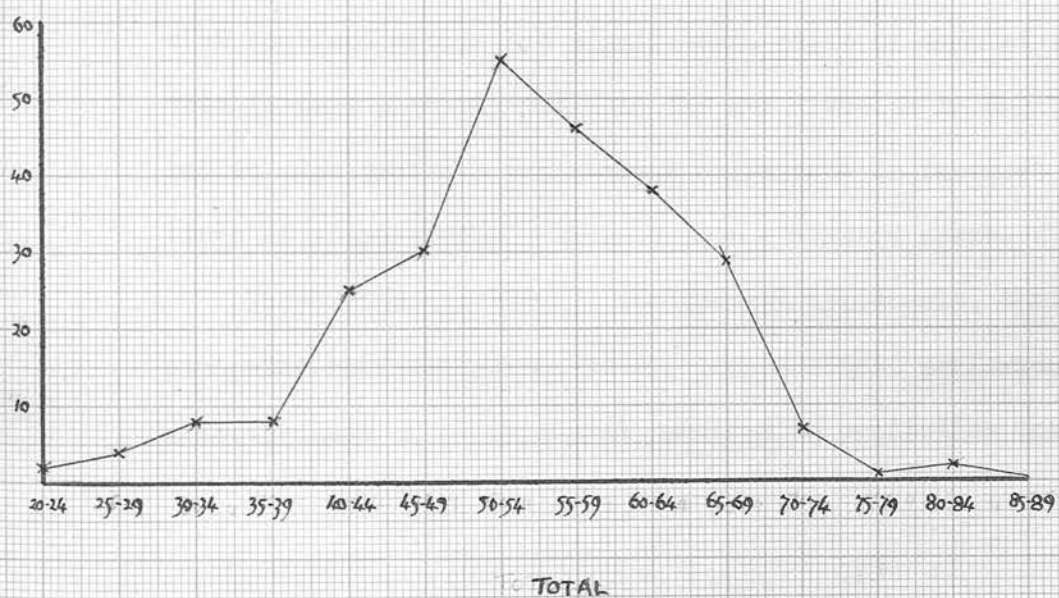
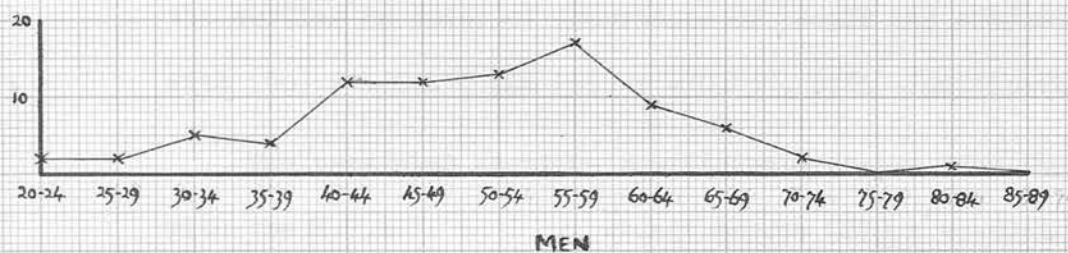
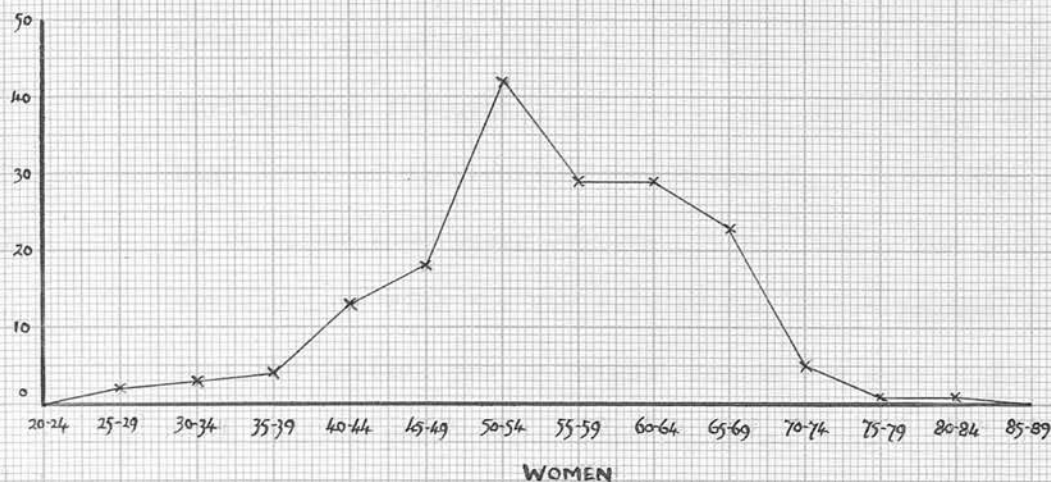
(20) English Year I	$r = 0.663$	sig. at 1%
(90) Education Year 3	$r = 0.430$	" " "
(34) G.C.E. 'A's	$r = 0.282$	" " "
(19) Education Year I	$r = 0.218$	" " "
(89) Education Year 2	$r = 0.131$	" " 5%
(88) Mathematics Year I	$r = 0.122$	" " "

As one might also expect there is general agreement with the assessment of verbal intelligence (23) $r = 0.377$ which is raised higher when the perceptual items are removed (24) $r = 0.411$, (both sig. at 1%). Factor B on the 16 P.F. correlates at this level (2) $r = 0.187$.

A large number of personality factors correlate at a significant level with the criterion which may, of course, indicate the importance of such factors in English performance, or the saturation effect of language skill on the other variables, as well as the influence of other factors upon the two in the correlation.

(51) Pitts Emotional Maturity	$r = 0.305$	sig. at 1%
(10) Protension	$r = 0.273$	sig. " "
(14) Self Sufficiency	$r = 0.203$	" " "
(1) Cyclothymia	$r = 0.140$	" " 5%
(8) Premsia	$r = 0.130$	" " "
(39) Extraversion	$r = 0.134$	" " "

It is interesting to note the pattern of correlations in that maturity and introversion tend to be associated with the criterion as are cyclothymia and premsia.



$$\bar{x} = 53.74$$

$$\sigma = 10.50$$

Those performing well in English, also tend to have a high level of aspiration (41 $r = 0.209$ sig. at 1%) and to judge their performances favourably (44 $r = 0.167$, sig. at 1%) to ascribe a high level of difficulties to others 84, $r = 0.144$ sig. at 5%) and to be older than their fellows (55 $r = 0.122$). The pattern of correlations with the M.T.A.I. scores is not unexpected except that the initial pro or 'right' scores are more highly correlated with English performance than the final ones - (26) $r = 0.272$ and (28) $r = 0.260$, respectively both being significant at the 1% level. In view of this, it is hardly surprising to find the agreement with the sorting in order of importance of people and subject matter, with (50) $r = 0.150$ and (53) $r = 0.130$, both significant at 5%

The remaining negative coefficients derive from the correlations with the M.T.A.I. Anti or 'wrong' scores (27) $r = -0.242$ significant at 1% i.e. higher than the final or pro score pattern. Finally nine coefficients with the number of men known and by whom known as well as with combined groups are significant, eight of them at the 1% level. This in part probably reflects the sex division in English attainment, but it also probably indicates a difference in interest along the lines of introversion - extraversion discussed above.

These findings support the general hypothesis, that relating to students' self-estimates, to previous academic performance and to the effectiveness of experimental measures in predicting academic success.

Variable 22. Mathematics Year I

Mathematics represents the third academic measure of the students' performance at the end of their first year in college. Scored out of a hundred, the obtained mean was 53.47 with the men's mean of 52.929 not significantly lower than the women's mean of 53.747.

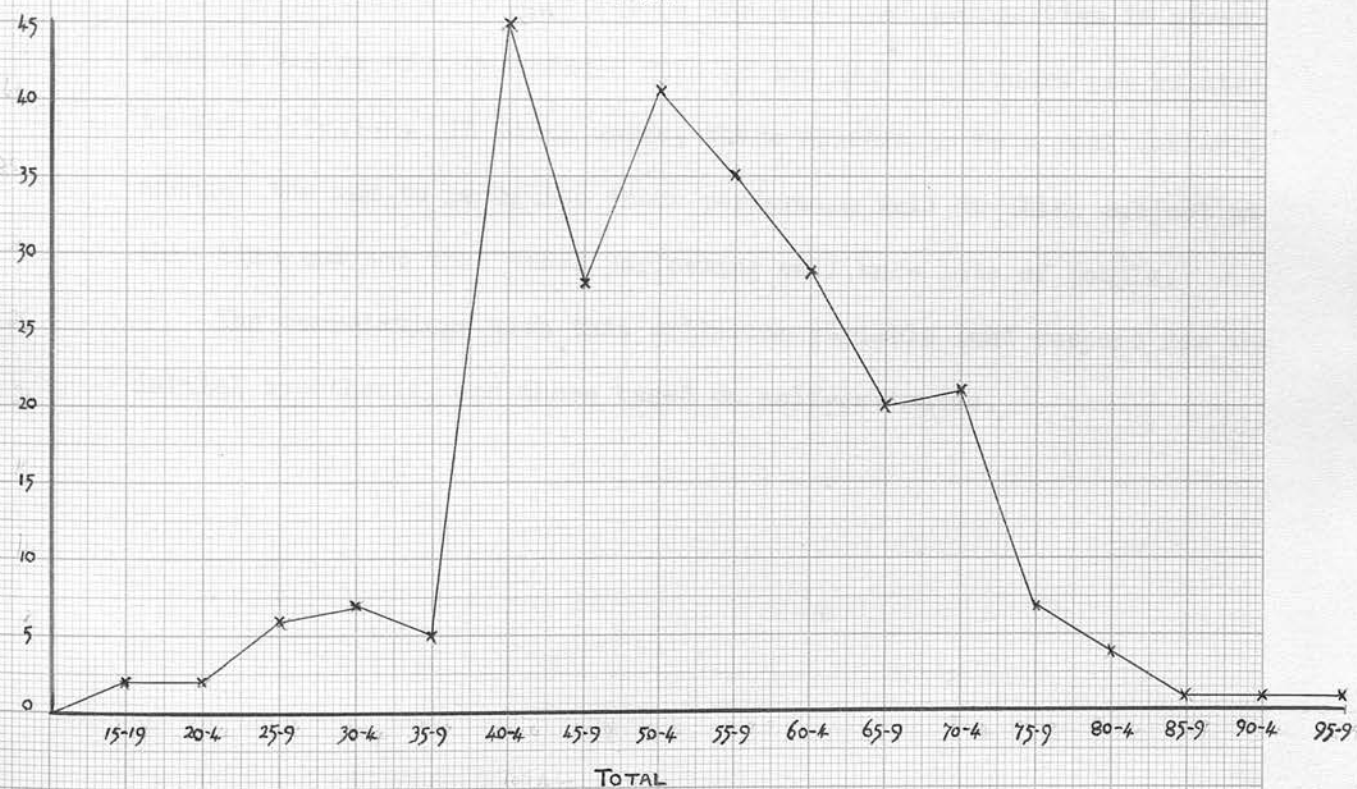
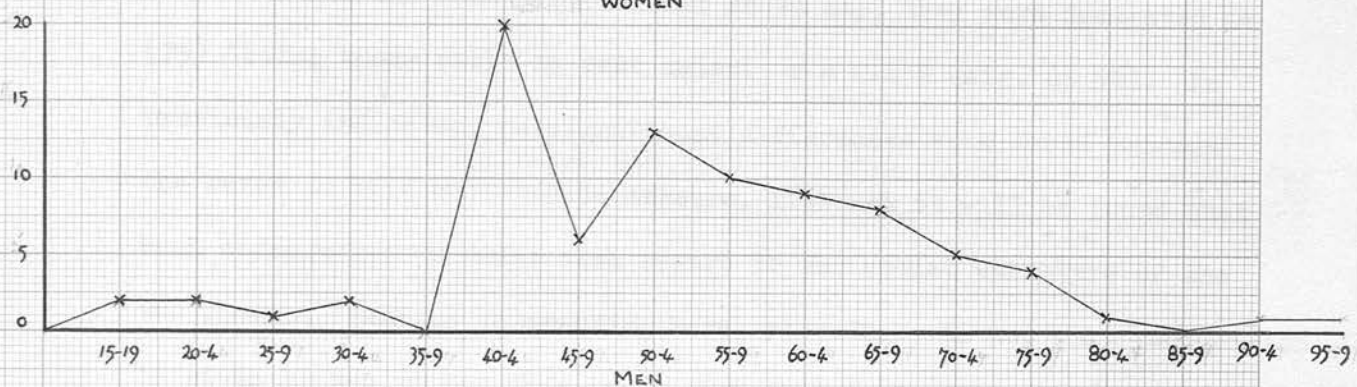
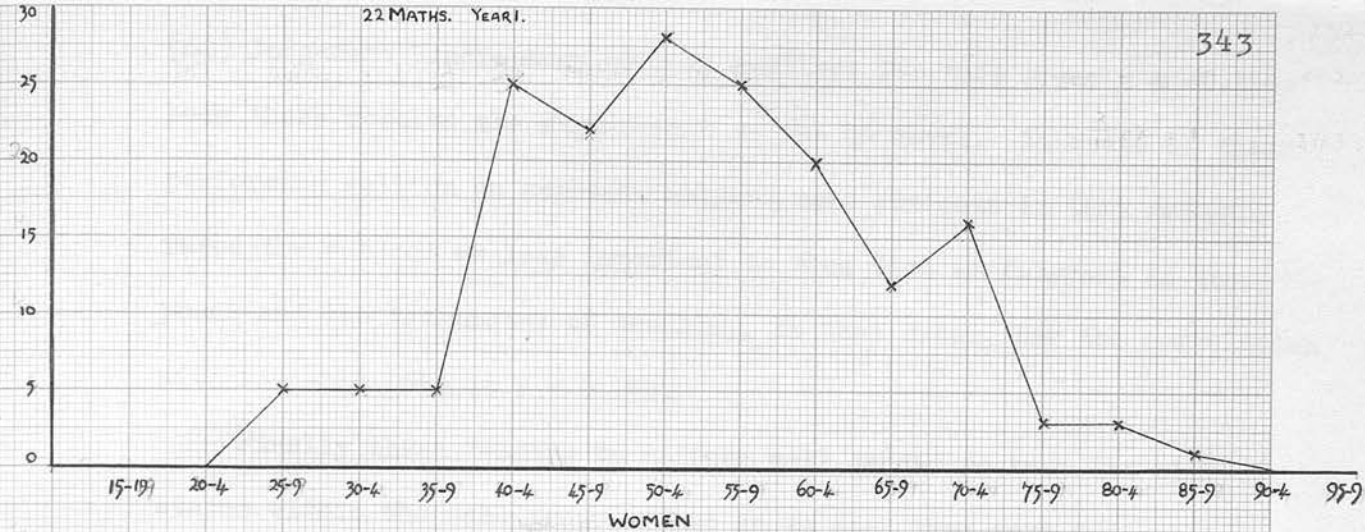
As one might expect, the highest correlation is with the results from the second year Mathematics examination (88) $r = 0.408$, significant beyond 1%. Similarly the relation with (21) Non Verbal Intelligence is not unexpected, $r = 0.180$, also significant beyond 1% while the correlation with (23) Verbal Intelligence is at 5% with $r = 0.151$.

It is interesting to note that the present criterion variable is related to a number of the other measures of academic performance as follows:

(90)	Education Year 3	$r = 0.166$	sig. at 5%.
(89)	Education Year 2	$r = 0.157$	" " "
(33)	G.C.E. 'O' Levels	$r = 0.122$	" " "

Even more surprising is that the performance in Mathematics is correlated at the 1% level of significance with the second year teaching performance (61) $r = 0.219$. Presumably the explanation is again that other factors supervene and we shall see later which factors are highly related to both the above mentioned factors. Mention has already been made of the correlation with (9) Protension $r = -0.136$ and (4) Dominance $r = -0.124$, both significant at the 5% level, and again this is in accordance with the sex difference on these factors, but the highest coefficient with a personality estimate is with (6) Superego strength $r = 0.193$, (sig. at 1%).

Those who achieve most on the Mathematics examination also tend to judge their performances in practical situations with a fairly high degree of accuracy. For example (85) Judgement of Teaching Grade after the 2nd practice correlates with our present criterion $r = 0.129$ while



$$\bar{x} = 53.47 \quad \sigma = 13.84$$

(64) Judgement Discrepancy also is smallest for this group $r = -0.156$: both these results are significant at the 5% level. In spite of their performing well on an academic subject, most students in this category rated the subject as less important to them than an interest in the pupil and the techniques of teaching, in that order, for the correlation with variable (53) is $r = 0.153$.

Finally those tending to perform well tended to have the highest status within the male group. That is to say, they were indicated as (75) 'being known well' by most males. $r = 0.139$ (sig. at 5%). As previously indicated, no significant differences were found between the sexes on this mathematics measure, although it will be found that such differences do exist with regard to the social structure of the two groups. What is interesting here, therefore, is not that recognition is given by men rather than women, but that such recognition is given when no claims of acquaintance made by the high performers are related to the criterion. In other words, there appears to be a real tendency amongst the men to recognise those performing well in this subject at this time, and not that those performing well know lots of people.

The correlations with this criterion variable lend support for the initial hypothesis, and those based on self-estimates.

Variable 88. Mathematics Year 2 (Final)

Like the English results for Year 2 this represents the final grade at the end of the general Mathematics course and is marked out of 100. The mean score 51.88 but the men's score of 52.529 is not significantly higher than the women's one of 51.559 ($t = 0.652$).

The Mathematics results correlate significantly with most of the other measures of the students' academic performances:

(22) Mathematics Year I	$r = 0.408$	sig. at 1%.
(89) Education Year 2	$r = 0.153$	" " 5%.
(20) English Year I	$r = 0.139$	" " "
(19) Education Year I	$r = 0.139$	" " "
(87) English Year 2	$r = 0.122$	" " "

It is particularly interesting to note the correlations of the first two practical performances with the criterion:

(61) Teaching Performance Year 2	$r = 0.174$	sig. at 1%.
(85) Teaching Performance Year I	$r = 0.153$	" " 5%.

To some extent it is likely that this relationship is accountable for in terms of intellectual ability:

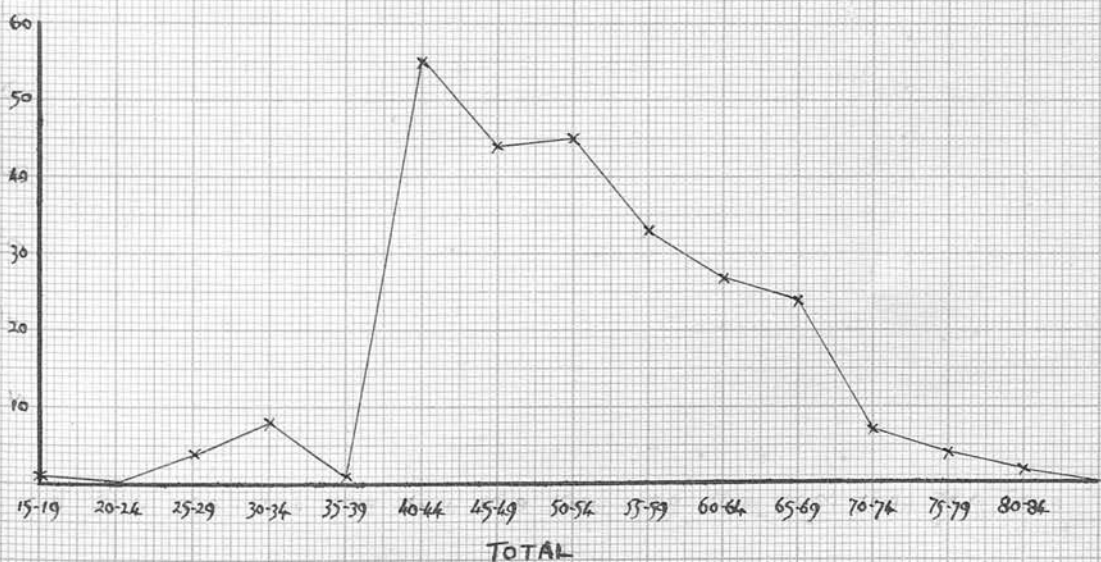
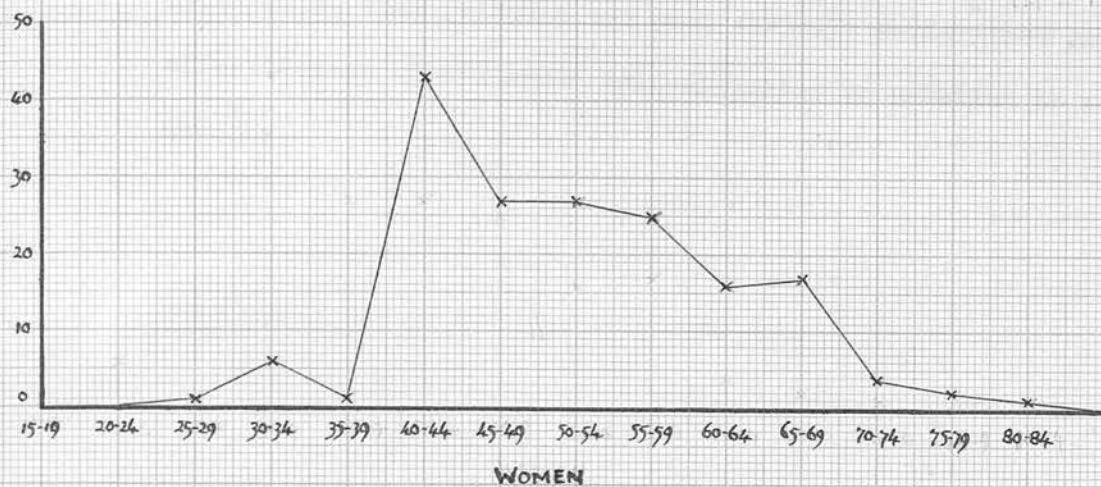
(21) Non verbal Intelligence	$r = 0.209$	sig. at 1%.
(23) Verbal Intelligence	$r = 0.186$	" " "
(24) Vocab. items	$r = 0.127$	" " 5%.

and to some extent is related to past academic ability e.g. (33) G.C.E. 'O' level pass $r = 0.160$ (sig. at 5%) and to the ability to judge teaching performance after the event (44 $r = 0.184$ sig. at 1%). In general, those who perform well on this criterion tend to ascribe a low level of difficulty to others (59, $r = -0.135$, sig. at 5%) and to be monoglot rather than bilingual (58, $r = -0.135$ sig. at 5%).

Only two prime personality factors correlate significantly, at the 5% level with ability in mathematics as measured by this criterion:

(6) Superego Strength	$r = 0.126$
(12) Guilt Proneness	$r = -0.127$

The qualities of persistence and confident adequacy are, therefore, found to be related to performance in this final mathematics examination.



$$\bar{x} = 51.88 \quad \sigma = 10.80$$

This criterion variable's results support the general hypothesis, that relation and past academic performance and the effectiveness of students' self-estimates in relation to academic success.

children of about 4th junior school age. The scores have a theoretical range 0 - 100 but actually extend from 30 to 90 with a general mean of 52.96. The male mean of 48.312 is significantly lower at the 1% level than the female mean of 57.276, ($t = 3.33$).

In spite of the fact that after the first year the work in Education becomes increasingly specialized, with different subjects involving responsibility for different aspects of the work, the actual correlations suggest that the subject of the highest correlation with the criterion

- | | | |
|----------------------|-------------|------------|
| (1) Education Year 1 | $r = 0.495$ | sig. at 1% |
| (2) Education Year 2 | $r = 0.371$ | " " " |

the subject of the highest correlation is that of the previous academic performance of the subjects.

- | | | |
|---|-------------|------------|
| (3) No. of 'A' level passes in 0.0.0.1. | $r = 0.356$ | sig. at 1% |
| (4) " " " " " " " " " " " " | $r = 0.295$ | " " " |

Academic performance in English during the two years of the general course is also significantly related to performance in

- | | | |
|-----------------------------|-------------|------------|
| (5) English Year 1 | $r = 0.319$ | sig. at 1% |
| (6) " " " " " " " " " " " " | $r = 0.215$ | " " " |

The first year Mathematics result is significant but does not reach the 1% level of significance but the only remaining measure of academic performance in theory tests (7) Mathematics Year 1, $r = 0.140$ is significant at 5%. Thus eight out of the nine theory performance measures are significantly correlated with the first year Education results.

Variable 19. Education Theory Year I

The data for this variable comes from the first written examination covering the year's work in Education based largely on child development and the methods appropriate for teaching children of infant and junior school age. The scores have a theoretical range 0 - 100 but actually extend from 20 to 69 with a general mean of 50.96. The men's mean of 48.318 is significantly lower at the 1% level than the women's mean of 52.276, ($t = 3.99$).

In spite of the fact that after the first year the work in Education becomes increasingly specialised, with different tutors assuming responsibility for different aspects of the work, the second and third year results in the subject form the highest correlations with the criterion:

(91)	Education Year 3	$r = 0.408$	sig. at 1%
(89)	Education Year 2	$r = 0.381$	" " "

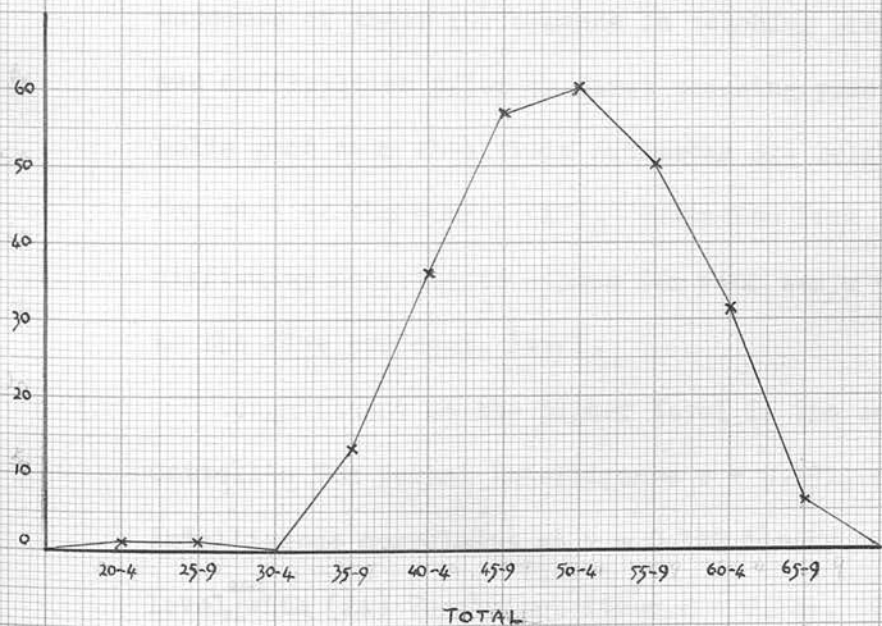
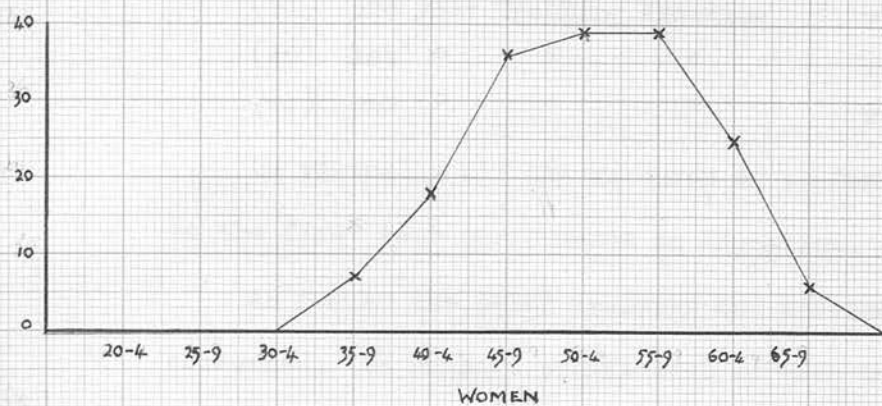
The next two largest correlations relate to the previous academic performance of the subjects:

(34)	No. of 'A' level passes in G.C.E.	$r = 0.336$	sig. at 1%
(33)	" " 'O' " " " "	$r = 0.293$	" " "

Academic performance in English during the two years of the general course was also significantly related to performance in Education:

(87)	English Year 2	$r = 0.219$	sig. at 1%
(20)	" " 1	$r = 0.215$	" " "

The first year Mathematics result is positive but does not reach the 5% level of significance but the only remaining measure of academic performance in theory work, (88) Mathematics Year 2, $r = 0.140$, is significant at 5%. Thus eight out of the nine theory performances are significantly correlated with the first year Education results.



$$\bar{x} = 50.96 \quad \sigma = 7.46$$

Even more interesting is the fact that the three practical teaching results are also highly related to the criterion under consideration.

(91)	3rd year Teaching Practice	$r = 0.280$	sig. at 1%.
(46)	1st " " "	$r = 0.196$	" " "
(61)	2nd " " "	$r = 0.169$	" " "

So virtually all the measures of student performance are related to the first year performance in Education.

As far as the other measures and assessments of personality are concerned, the highest coefficient is with the (51) Pitts Emotional Maturity Scale ($M - 1$) $r = 0.266$ (sig. at 1%) followed a little later by the alternative scoring of the same scale (52) $M/M+1$, $r = 0.194$, (sig. at 1%). Between these two come (41) the Estimate of the Final Grade prior to the first teaching practice, $r = 0.235$ and (36) the difference between the level of difficulties ascribed to others and admitted personally, $r = 0.196$, both significant at five per cent. It is interesting to note that the most successful in the theoretical situation have themselves a lower level of apprehension about the outcomes of their performance in teaching practice (30). Estimates of own difficulties prior to first teaching practice, $r = -0.130$, and this holds good even when their estimates are related to the average level for each of the sexes, (47). Deviation from the average level of difficulty ascribed to others for each sex, $r = 0.125$, both significant at the five per cent. level.

Significant at the higher level is the correlation with (21) Cattell's Non Verbal Intelligence $r = 0.192$, while the (23) Verbal Intelligence correlates at $r = 0.120$ barely significant at the 5% level, ^{and} with (24) Vocabulary items, $r = 0.122$. Thus the verbal intelligence does not appear to be very important in influencing the result in Year I Education, although nonVerbal ability does.

Yet in terms of judging their performance, the more successful reveal a higher degree of understanding their own capacities as well

as tending to have a high level of aspiration. Thus:

- (63) Goal Discrepancy (Aspiration - Performance) $r = -0.159$
sig. at 5%
- (43) Teaching Final Estimate pre 1st Practice $r = 0.151$
sig. at 1%
- (44) 1st Year Theory Estimate post 1st " $r = 0.142$
sig. at 1%

Age does not appear to be an advantage at the first year examination: (55) Age in months $r = -0.123$, while the more extravert have a somewhat better performance even in this theoretical situation (17) Cattell 2nd order Introversion $r = -0.140$ (sig at 5%). At the same time a clear sex difference appears; six measures of range of acquaintance and status amongst men are negatively correlated with the criterion, four of them significant at 1% whilst one measure of status amongst women, (78) the number of women by whom known well is positively correlated ($r = 0.124$) at 5% level. This may suggest a most interesting distinction between the attitudes of the two sexes.

Yet generally, as already indicated, first year Education results are related to (1) Cyclothymia, $r = 0.151$ and (5) Surgency, $r = 0.122$, both significant at the five per cent. level.

In terms of the contrasting criterion group analysis, those achieving the best performances at the first year stage in Education are found to have more passes at Advanced level (34: $t = 2.267$, sig. at 5%) and to be more mature on the (51) Pitts Emotional Maturity Scale $t = 2.057$ (sig. at 5%). The remaining variable to produce significantly contrasting scores is (63) Goal Discrepancy, $t = 2.612$ (sig. at 5%) with the most able in Education producing low negative scores indicating a performance level slightly above their level of aspiration, and the least able producing moderate positive scores which show that their performance does not measure up to their aspiration on the occasion in question.

Thus this criterion variable lends weight to the initial hypothesis by finding relationships between a number of personality measures and first year academic performance in Education. In these it also supports the hypotheses relating to emotional maturity and the use of students' self-estimates.

The structure of performance coefficients is again found:

(31) Teaching Practice Year 1	$r = 0.577$	sig. at 1%.
(40) Education Year 1	$r = 0.430$	" " "
(13) G.I.E. 1st level	$r = 0.360$	" " "
(34) English Year 1	$r = 0.219$	" " "
(26) English Practice Year 1	$r = 0.208$	" " "
(51) Teaching Practice Year 1	$r = 0.170$	" " "
(47) Education Year 1	$r = 0.161$	" " "
(25) Education Year 1	$r = 0.160$	" " "
(36) G.I.E. 1st level	$r = 0.157$	" " "
(41) English Year 1	$r = 0.155$	" " "

On the other hand, very few personality variables reach the 1% level of significance. Two which do reach this level are (9) Propensity $r = -0.222$ and (51) First Emotional Maturity, $r = .161$, while (34) only approaches this level with $r = 0.219$ and (4) Education with $r = 0.228$ is also significant only at the 5% level. These subjects, none of this criterion also had the highest initial level of motivation (45: $r = 0.155$, sig. at 5%, and lowest initial level of motivation (46: $r = 0.157$, sig. at 5%), and the lowest initial level of motivation (47: $r = 0.161$, sig. at 5%, and the highest initial level of motivation (48: $r = 0.170$, sig. at 5%).

The remaining correlations on the positive side are with (35) Language, $r = 0.121$ (sig. at 5%) and with estimates of social anxiety and by which those which probably represent a sex difference, for the three positive correlations remain by are with and lower well and by the same well.

These findings support the general hypothesis as well as those by the

Variable 89. Education Theory Year 2

The second year Education result is based on an examination in general theory including philosophy, history, psychology, sociology and special education, as well as methods of teaching. The mean score for the group is 52.72 and that of the women 53.682 which is significantly higher than the men's mean of 50.788 ($t = 3.664$, sig. at 1%).

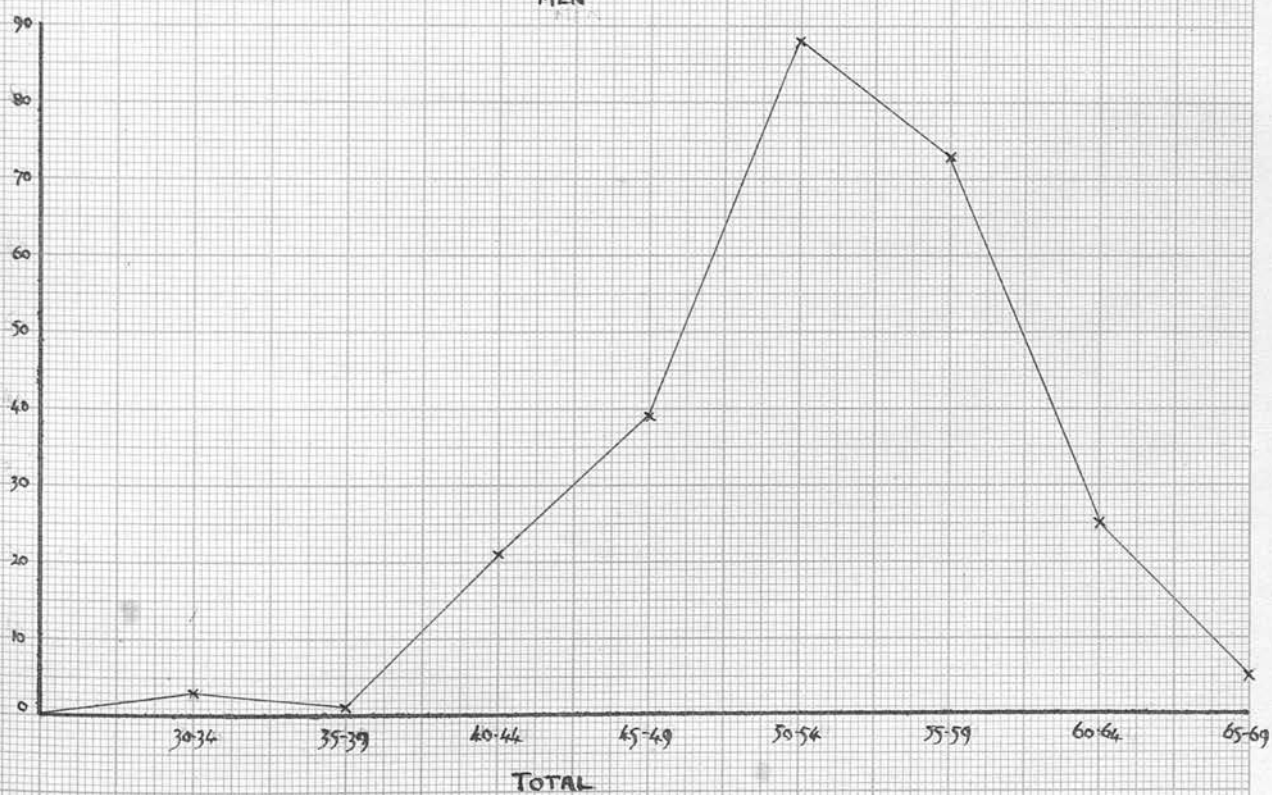
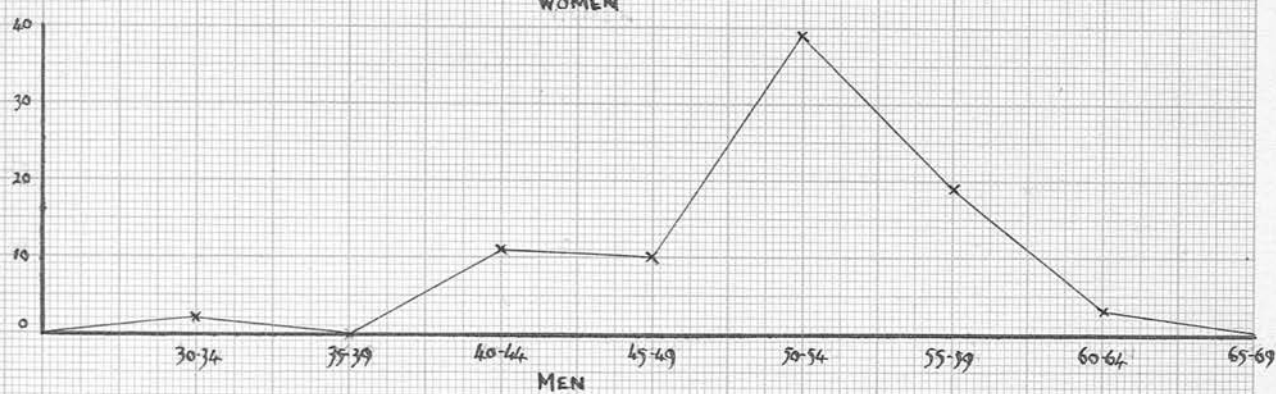
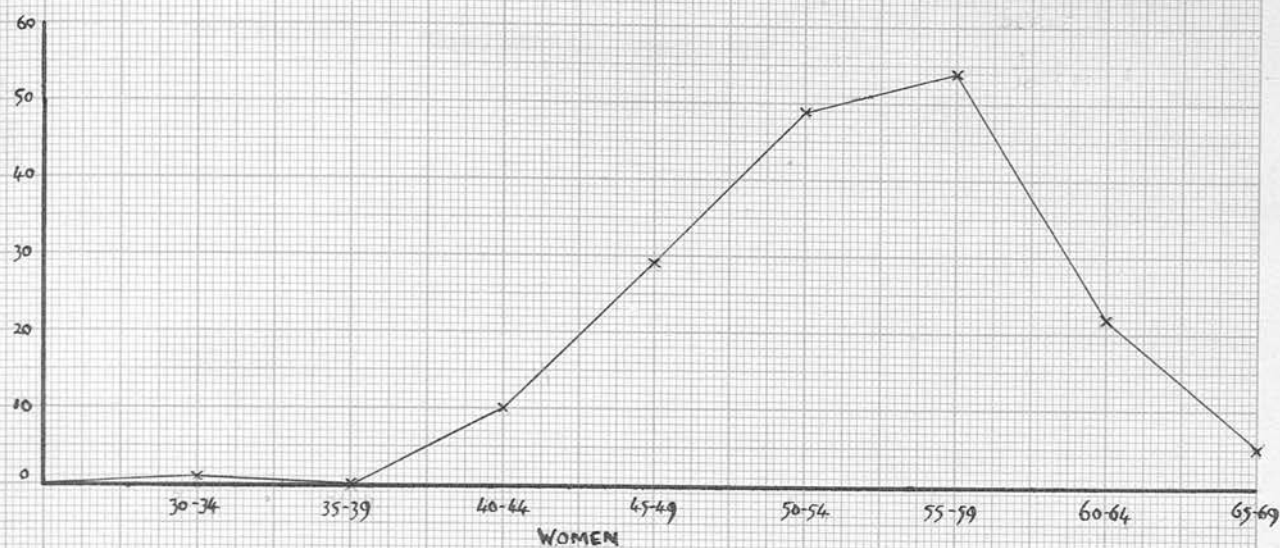
The structure of performance coefficients is again found:

(91) Teaching Practice Year 3	$r = 0.479$	sig. at 1%.
(90) Education Year 3	$r = 0.430$	" " "
(19) G.C.E. 'A' levels	$r = 0.380$	" " "
(34) English Year I	$r = 0.218$	" " "
(20) Teaching Practice Year 2	$r = 0.188$	" " "
(61) Teaching Practice Year I	$r = 0.170$	" " "
(46) Mathematics Year I	$r = 0.162$	" " "
(22) Mathematics Year 2	$r = 0.162$	" " "
(88) G.C.E. 'O' levels	$r = 0.157$	" " 5%
(87) English Year 2	$r = 0.153$	" " "

On the other hand, very few personality variables reach the 1% level of significance. Two which do reach this level are (9) Protension $r = -0.163$ and (51) Pitts Emotional Maturity, $r = 0.161$, while (8)^{Premia} only approaches this level with $r = 0.159$ and (4) Dominance with $r = -0.126$ is also significant only at the 5% level. Those achieving most on this criterion also had the highest initial level of aspiration (42: $r = 0.135$, sig. at 5%), and tended to ascribe a lower level of difficulty to themselves than to others (37, $r = 0.135$; 30, and 32 both $r = 0.138$).

The remaining correlations on the positive side are with (58) Language, $r = 0.121$ (sig. at 5%) and with estimates of women known and by whom known which probably represent a sex difference, for the three positive correlations remaining are with men known well and by whom known well.

These findings support the general hypothesis as well as those hypotheses



$$\bar{x} = 52.72 \quad \sigma = 6.00$$

relating to Emotional maturity, past academic performance, self-estimates and experimental measures.

The first part of the report is devoted to a description of the work of the three groups of the center and is followed by a summary of the results of the three papers. Originally these papers were for Principals and Teachers, but they are being revised to reflect the present position. The first paper is primarily concerned with the psychology, history and theory of education generally, while the second is devoted to a consideration of these principles in the present practice of education generally. The third paper is a statement of educational objectives as they are in the center. In both papers the starting point is the fact that the center is a school and that the children are the main concern. The first paper is a statement of educational objectives as they are in the center. In both papers the starting point is the fact that the center is a school and that the children are the main concern. The first paper is a statement of educational objectives as they are in the center. In both papers the starting point is the fact that the center is a school and that the children are the main concern.

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(1) American Year 2	100.00	100.00	100.00
(2) American Year 1	100.00	100.00	100.00
(3) English Year 1	100.00	100.00	100.00
(4) English Year 2	100.00	100.00	100.00
(5) S.C.E. 1st level	100.00	100.00	100.00
(6) Mathematics Year 1	100.00	100.00	100.00
(7) S.C.E. 2nd level	100.00	100.00	100.00

For as this pattern of academic attainment explains in terms of intellectual ability alone the only (1) Total Intelligence score of 100.00 level of attainment is 100.00 which is lower than the

Variable 90 Final Education Theory: Year 3

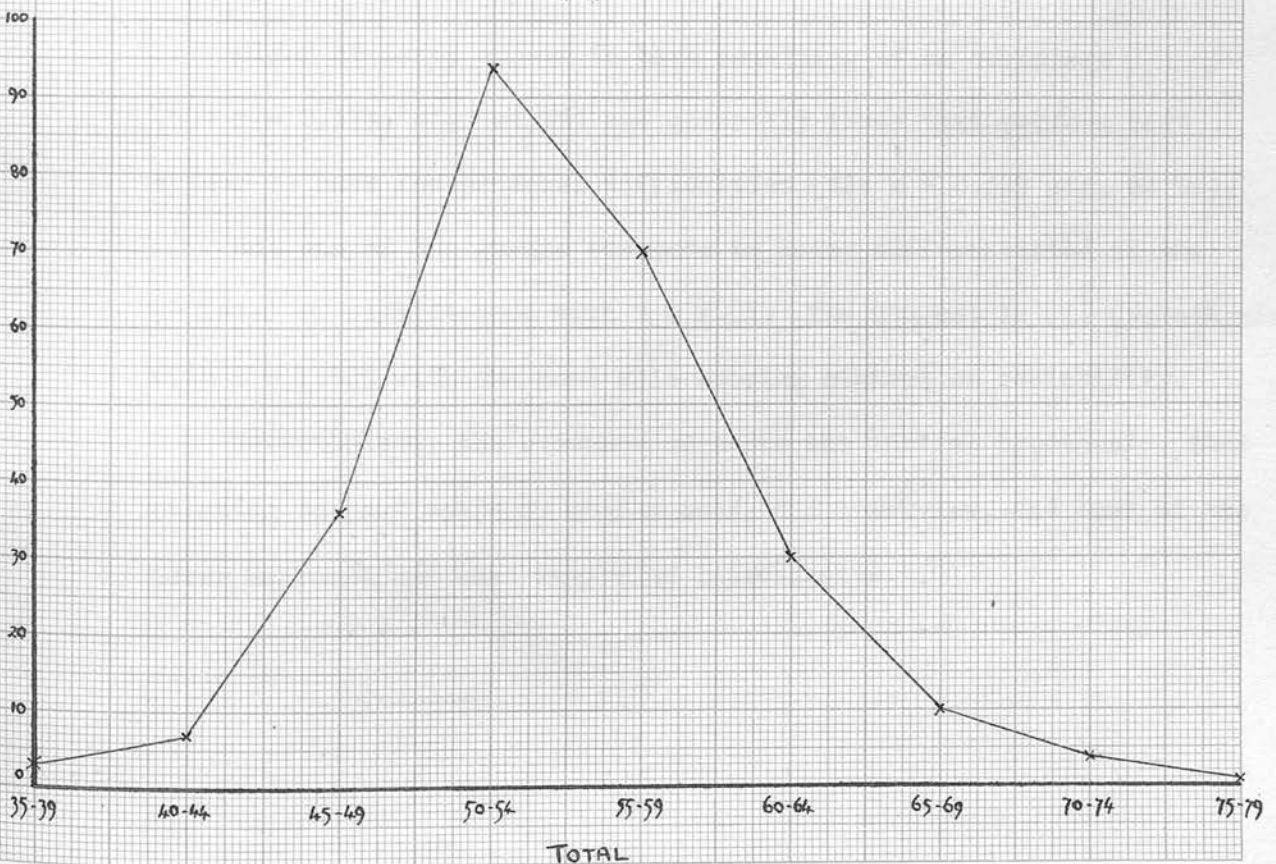
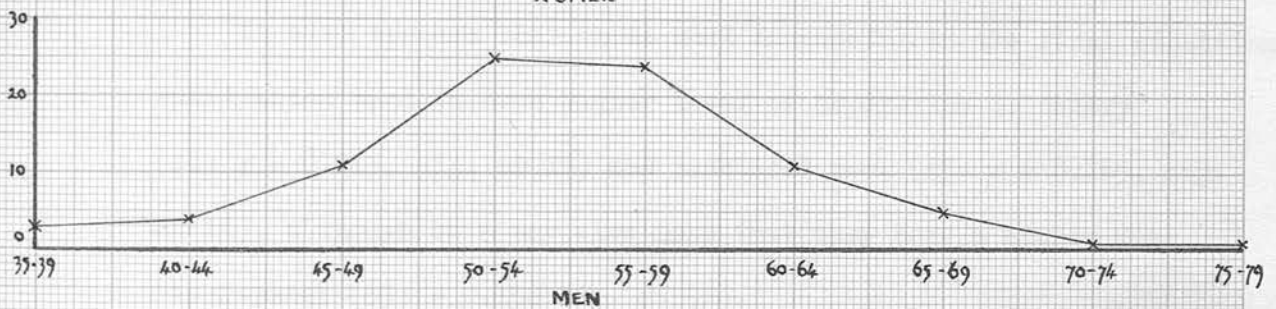
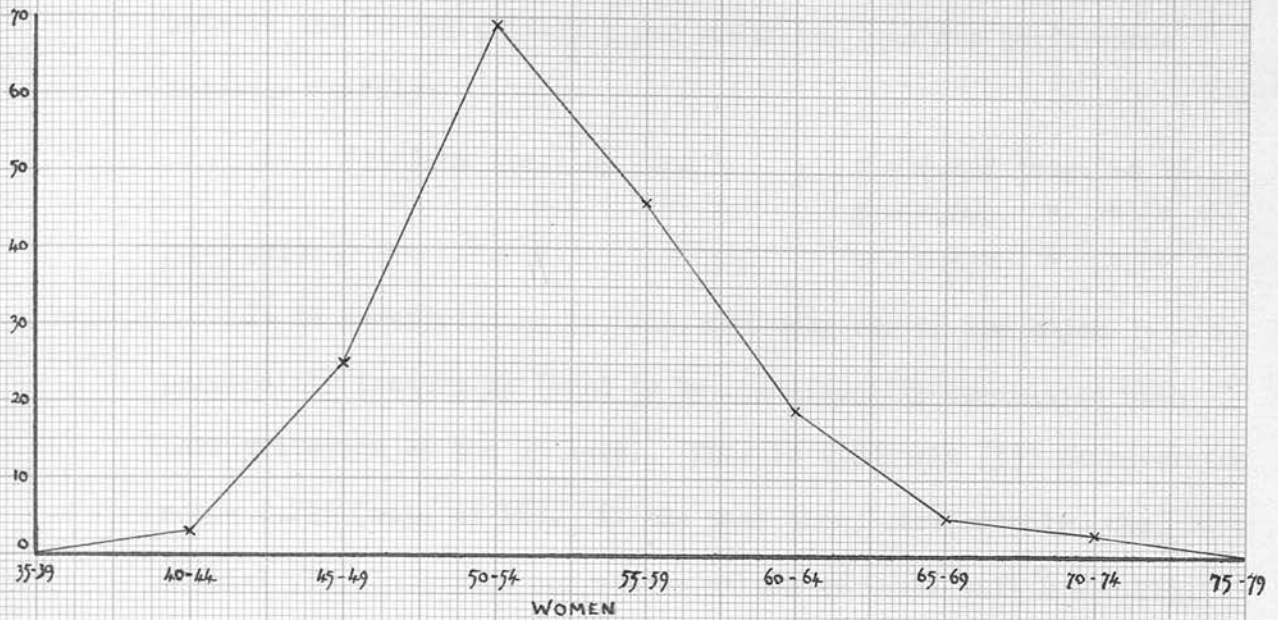
The third year examination in Education covers the work of the three years of the course and is examined by means of a 3 hour and a 2 hour paper. Originally these papers were for Principles and Methods, but these titles do not reflect the present position. The first paper is primarily concerned with the psychology, history and theory of education generally, while the second is devoted to a consideration of these principles to the present practice of education generally rather than to a statement of methodological procedures as was once the case. On both papers the marking is out of 100 after which the marks are combined and divided. Questions are marked by the persons who set them so that each script is marked by between five and ten tutors.

On the present occasion the mean for the whole group is 54.529 with that of the men the same as the women, although, the men have a wider standard deviation of 7.176 compared with that of the women of 5.433.

This final criterion is not so closely related to the broad pattern of other academic performance measures, but it is sufficiently in accord with them to support the view that all of these performances are highly structured:

(89) Education Year 2	$r = 0.429$	sig. at 1%
(19) Education Year I	$r = 0.408$	" " "
(20) English Year I	$r = 0.277$	" " "
(87) English Year 2	$r = 0.266$	" " "
(34) G.C.E. 'A' levels	$r = 0.170$	" " "
(22) Mathematics Year I	$r = 0.166$	" " "
(33) G.C.E. 'O' levels	$r = 0.146$	" " 5%

Nor is this pattern of academic attainment explicable in terms of intellectual ability alone for only (23) Verbal Intelligence reaches the 5% level of significance with $r = 0.121$ which is lower than the



$$\bar{x} = 54.529 : \sigma = 6.044$$

correlation between any of the academic performances measure.

It is particularly interesting to note that the correlations between the theory criterion and practical teaching performance increase steadily:

(46)	Teaching Practice Year I	$r = 0.234$	sig. at 1%.
(61)	" " " 2	$r = 0.290$	" " "
(91)	" " " 3	$r = 0.479$	" " "

It is disappointing to note that only one of the major personality factors is found to be significantly correlated with this criterion at the 5% level. This is Eysenck's (39) Extraversion $r = -0.226$ (sig. at 1%). At the same time, unexpectedly, the initial (35) Interview correlates at the 1% level with $r = 0.219$.

It also appears that those most successful in the final education examination tend to have higher level of aspiration in theory (41: $r = 0.213$, sig. at 1%) and practical work (43: $r = 0.163$, sig. at 1%), although this may also mean that they have a higher Goal Discrepancy (63: $r = 0.158$ sig. at 5%).

Older students appear to have something of an advantage (55: $r = 0.173$, sig. at 1%) and generally those that perform best appear to have few personal difficulties (32: $r = 0.129$ sig. at 5%).

Not one of the groups succeeds in being differentiated at the 5% level of significance with $t = 2.01$. The nearest is (i) Cyclothymia with $t = 1.985$, with the most able scoring highest on sociability.

Nevertheless, the evidence supports the initial hypothesis, that relating to past academic performance, the interview, and some of the newer measures, and that regarding introversion.

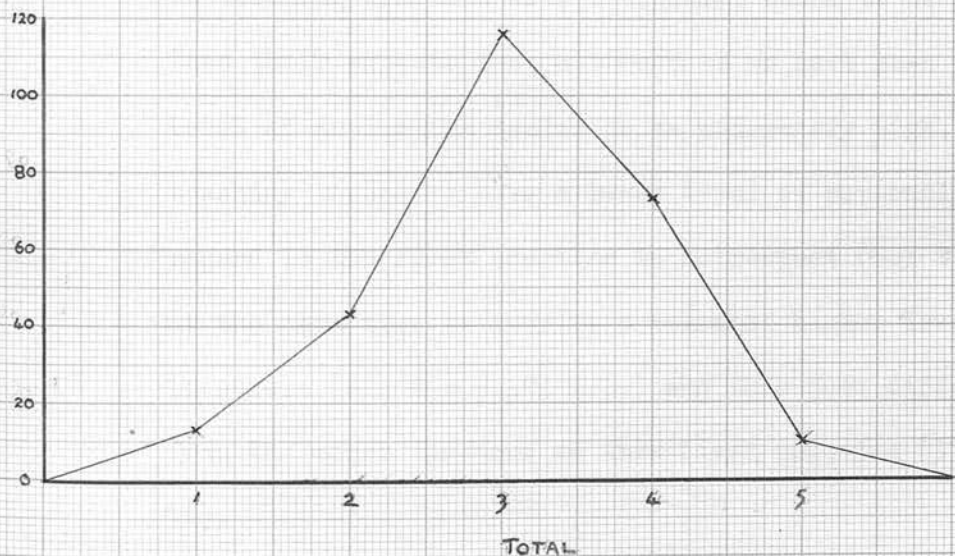
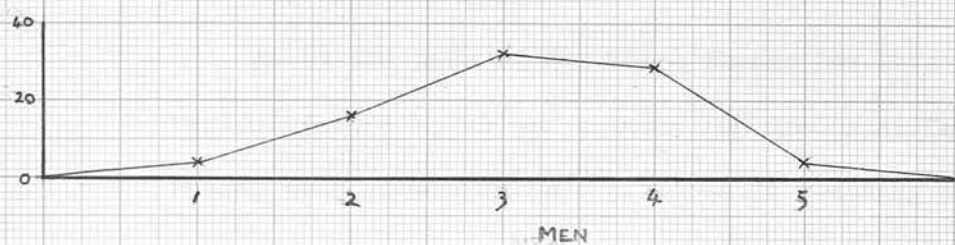
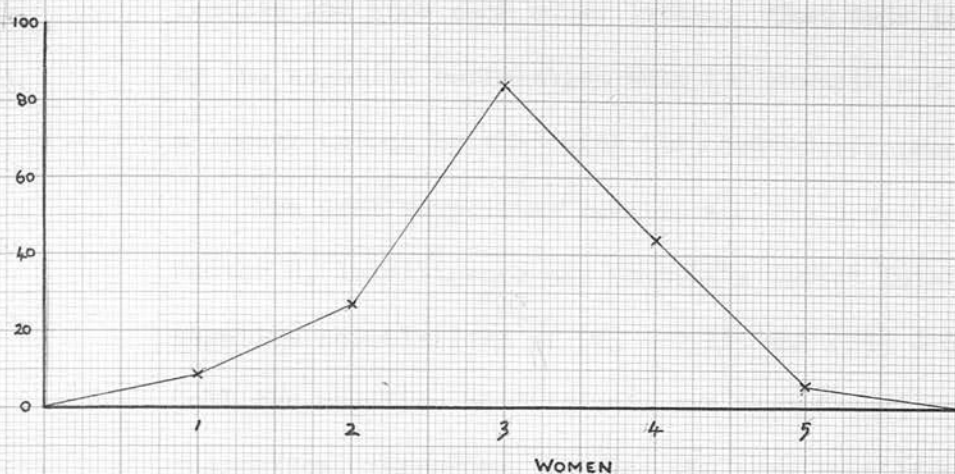
Variable 46 1st Year Teaching

The first year teaching performance lasts only a fortnight and combines a period of observation for the first few days with an introduction to teaching. The amount of teaching aimed at is approximately three prepared lessons a day, but this varies according to the school. Grades are not normally awarded after this practice but tutors present written reports on the students indicating their views very clearly and not infrequently using the terms average, good average, and so on, and occasionally adding grades. For the purposes of the analysis these reports were graded by the writer on a five point A-E scale. Groups of two or three dozen were then sorted into five categories by at least two other tutors and these were then averaged.

The mean score for the group is 3.09 with no significance in the observed difference between the men's mean of 3.153 and the women's mean of 3.065.

In spite of the unusual way of grading the first year performances on practical teaching, there was found to be agreement with (61) Second year Teaching $r = 0.375$, (91) Third year Teaching, $r = 0.354$ and with (19) Education Theory in the first year, $r = 0.196$ and (90) Education in the Third year $r = 0.235$, all of which are significant at the one per cent. level. There is also a high level of agreement with the estimates of teaching performance e.g. (43) Teaching Estimate, Pre First Practice $r = 0.350$ and (45) Teaching Estimate, Post First Practice $r = 0.333$ (both sig. at 1%). At this same level of significance are the correlations with (6) Superego Strength $r = 0.162$ and (7) Parmia, also $r = 0.162$.

A number of negative coefficients are yielded from measures of personal difficulties e.g. (32) $r = -0.158$ and (84) $r = -0.140$ (both sig. at 5%). The number of (66) females known and (72) known



$$\bar{x} = 3.09 \quad \sigma = 0.90$$

well, $r = - 0.134$, probably indicates that the more sensitive were females and know each other better. That this is so is also suggested by the negative correlation with (8) Premia $r = - 0.139$ and perhaps to a lesser extent by that with (14) Self-Sufficiency $r = - 0.137$.

The most surprising results are the correlations of Cattell's Factor B, Intelligence and Cattell's Verbal Intelligence, both yielding negative correlations of (2) $- 0.145$ and (23) $- 0.125$ respectively. (all the negative coefficients are significant at the 5% level) The suggestion, therefore, is that the more intelligent perform worst on this initial practice.

As in the case of Education Theory for this year, one of the variables upon which the extreme 10% groups differed most significantly having been sorted on the criterion of Teaching performance, is Goal Discrepancy, although this time the divergence is greater but in the same direction as before, (63) $t = 6.153$ (sig. at 1%). The most able on teaching practice are, therefore, found to be performing far better than their expectation, although as we have seen previously, their level of aspiration tended to be moderately high. The most able in teaching tended to have a lower level of personal difficulty with regard to the first practice in retrospect (60: $t = 1.164$ N.S.), but at the same time to ascribe a somewhat higher level of difficulties to others (61: $t = 0.164$ N.S.) and this does differentiate the best from the worst teachers on this first practice (37: $t = 2.030$ sig at 5%).

Therefore, it appears that there is a modicum of support for the initial general hypothesis, and for the fourth, in that a small number of personality measures and student estimates are related to this criterion variable.

Variable 61 2nd Year Teaching

As previously indicated, the second year teaching practice is the first extensive period of teaching for the students, lasting a period of some five weeks. Their performance is graded on the U.W. eleven point scale and the mean score for the group is 5.59 with that of the men slightly, but insignificantly higher at 5.682 than that of the women at 5.541.

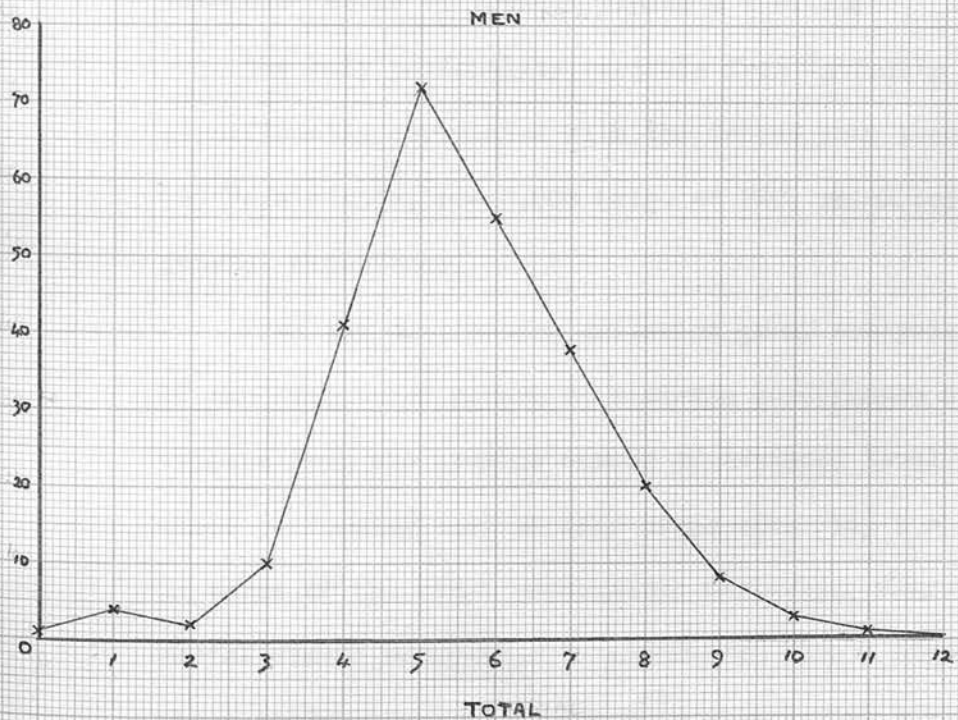
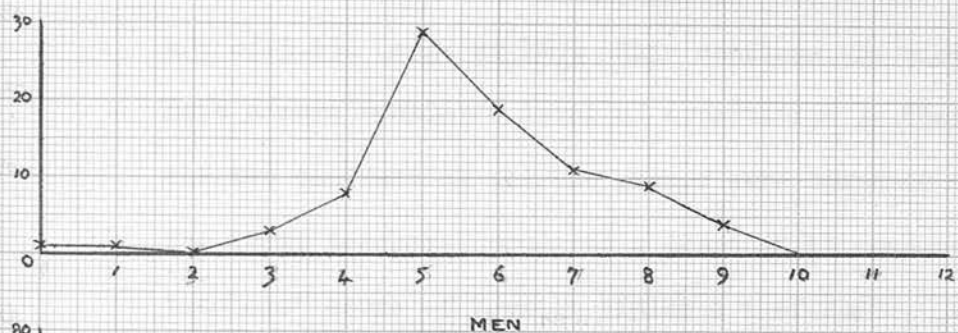
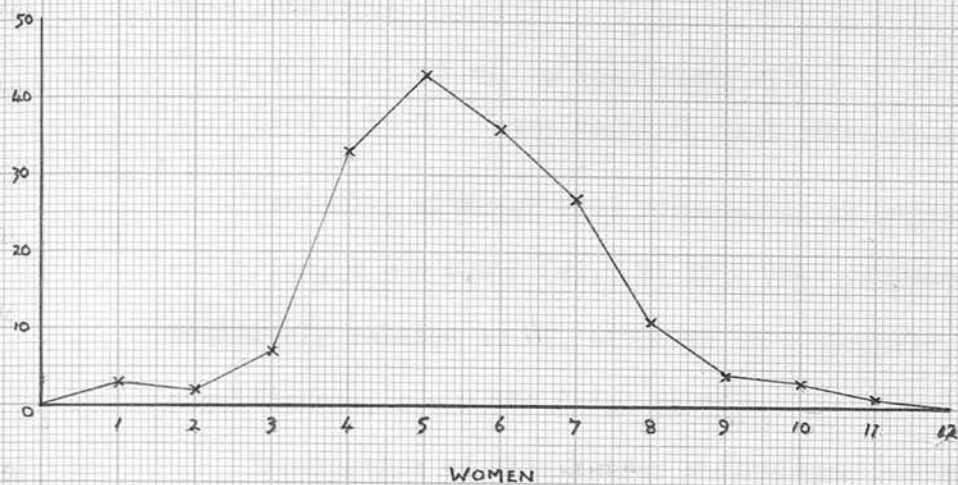
As in the case with the first year academic results there is a clear tendency for most of the measures of student performance to be related to the present criterion. This is especially true of the correlations with the first and third year teaching results; (46) $r = 0.375$ and (91) $r = 0.425$, both significant at the 1% level. The following academic results in theoretical subjects also suggest a consistency of performance in this sphere too:

(22)	Mathematics	Year I	$r = 0.218$	sig. at 1%:
(88)	"	" 2	$r = 0.174$	" " "
(19)	Education	" I	$r = 0.169$	" " "
(89)	"	" 2	$r = 0.163$	" " "
(90)	"	" 3	$r = 0.294$	" " " ,

while the correlation with (35) the Interview indicates its general efficiency, $r = 0.190$ (sig. at 1%).

There is also a general tendency for success at this stage to be closely associated with high levels of aspiration and accuracy of judgement e.g. (85) the estimate of the 2nd practice result after the event $r = 0.356$ (sig. at 1%). Difficulty levels do not figure prominently, but the (32) Estimate of personal difficulties after the 1st Practice correlates negatively with the second practice, $r = 0.141$ (sig. at 5%).

Two interesting points emerge: first, that (39) Eysenck's extraversion is negative^{ly} correlated with the criterion, contrary to the hypothesis ($r = -0.105$) but the status of the subject amongst men,



$$\bar{x} = 5.59 \quad \sigma = 1.69$$

and amongst men and women combined, is highly related to success at this juncture:

- (75) No. of men by whom known well $r = 0.153$ sig. at 5%
 (80) " " " and women by whom known well $r = 0.135$ " " "

Secondly, although Goal Discrepancy is negatively related to the criterion, $r = -0.256$ (sig. at 1%), (64) Judgement Discrepancy is positively related to it, although at a slightly lower level of significance, $r = 0.184$ (sig. at 5%).

Examination of this latter phenomenon indicates that the most successful 10% on the teaching criterion had a Goal Discrepancy of -13 compared with the least successful 10%'s score of 12, which yields a t of 3.650 (sig. at 1%). This confirms the view that the more able have a more realistic level of expectation in their performance. When the two contrasting extreme groups were compared on Judgement Discrepancy the 'best teachers' produced a score of 11 compared with the 'worst teachers' score of 7, which yields a t of 2.450, (sig. at 1%).

The only personality variable from Cattell's 16 P.F. to be significantly correlated with the Second year teaching result is (6) Persistence, $r = 0.208$ (sig. at 1%), which corresponds well with general experience.

From the contrasting criterion group analysis, the only evidence of the structured nature of academic performance on this variable appears from the greater number of Advanced level passes obtained by those performing best at this stage with (34) $t = 2.114$ (sig. at 5%). In terms of the other personality variables, only the measure of social status amongst males appears to have a significant bearing, with those performing best in the theoretical work having the least capacity^{for attraction}, or more accurately, who attract the least masculine attention in terms of (75) the number of men by whom known well, $t = 2.247$ (sig. at 5%).

Thus this criterion variable is found to support the general hypotheses and the fourth in that a number of estimates are found to correlate significantly with it. But the hypothesis which suggests that extraverts perform best in teaching is not supported; indeed, the suggestion from the evidence is that a moderate degree of introversion is associated with practical teaching performance.

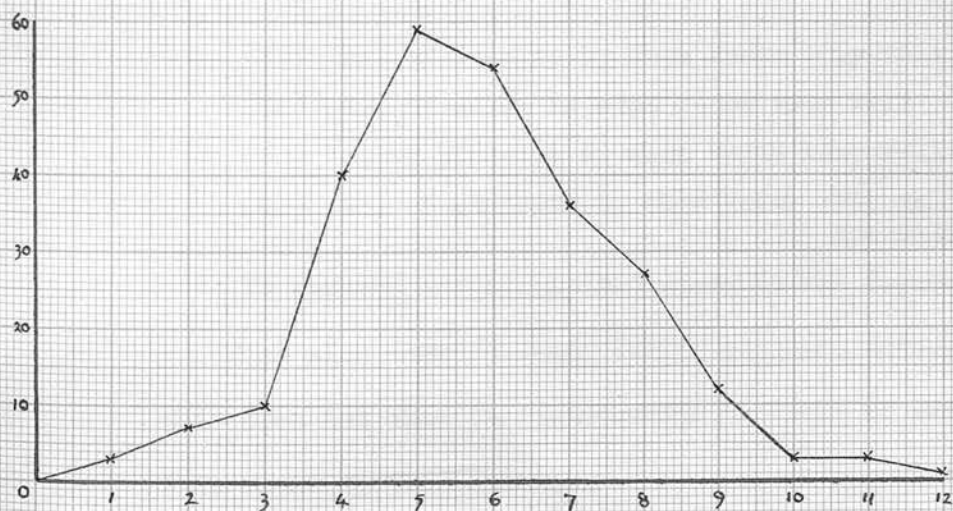
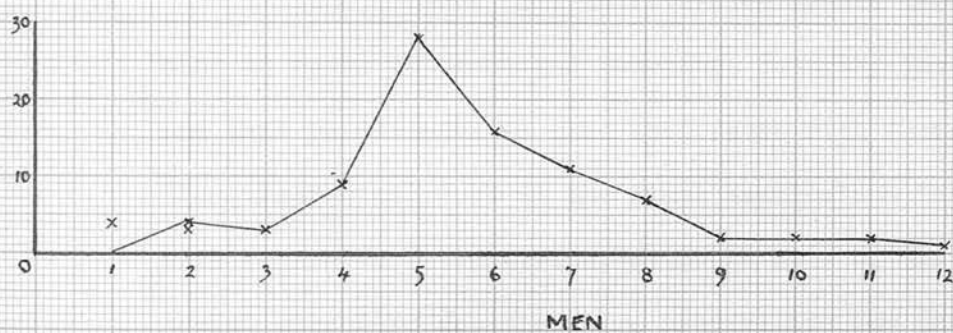
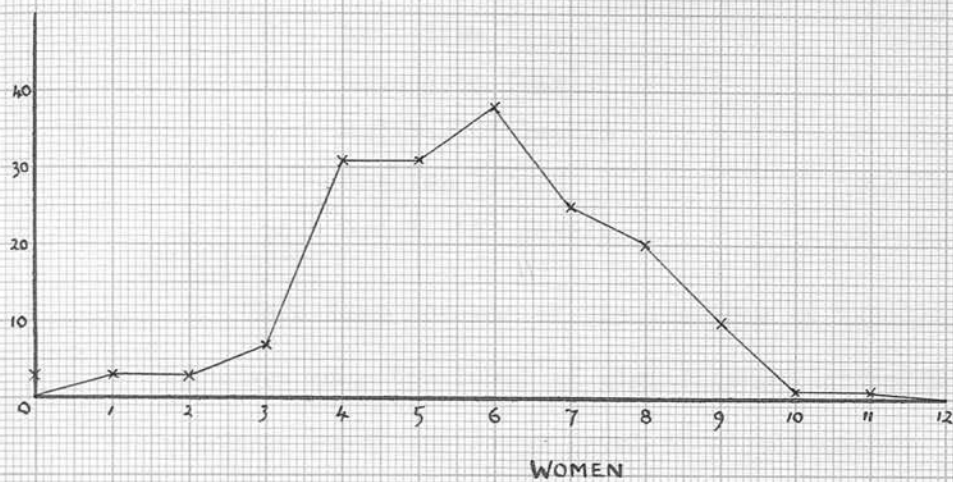
Variable 91. Final Teaching Year 3

The final teaching assessment, like the previous ones (variables 46 and 61) is based on the A - E scale with intervening plus and minus grades. The grades are decided internally by tutors who visit the students approximately twice a week, on average, during the seven week practice. Grades are awarded initially by tutors; a group of tutors will then be seen assessing students individually, by a moderator who will then adjust the scoring of tutors who are too harsh or lenient as compared with the rest of the group. The moderating tutors will likewise all be seen by the head of the Education department and the grades thereby standardized as far as possible.

This scheme came into operation for the first time in the final practice. It was intended to present the scheme 'en bloc' to the external examiners or moderators to judge from the sample of students they saw (approximately 20%) whether or not the standards of the college were in line with those of other colleges in the U.W. School of Education, rather than to agree the ratings of individual students or lessons. In the event, most of the grades were accepted, but a considerable proportion were up-graded by one or more positions as a result of exceptional performance on the day of the visit; three cases were down-graded for similar reasons.

The means score for the whole group is 5.792 with that of the men slightly, but insignificantly higher than that of the women with scores of 5.812 and 5.782 respectively ($t = 0.115$).

It is particularly interesting to note that, although the first two years' practical teaching grades are progressively more closely correlated with the third year teaching result, the highest correlation is with theory result of the third year. With the exception of Mathematics, most of the other academic performances also correlate significantly with the present practical performance criterion:



$$\bar{x} = 5.792 \quad \sigma = 1.875$$

(90)	Education Year 3	$r = 0.494$	sig. at 1%.
(61)	Teaching Practice Year 2	$r = 0.425$	" " "
(46)	Teaching Practice Year 1	$r = 0.324$	" " "
(89)	Education Year 2	$r = 0.321$	" " "
(19)	Education Year I	$r = 0.280$	" " "
(33)	G.C.E. 'O' levels	$r = 0.131$	" " 5%
(20)	English Year I	$r = 0.124$	" " "
(34)	G.C.E. 'A' levels	$r = 0.124$	" " "

This time not one of the measures of intelligence reaches anywhere near the level of significance, although two major personality measures reach the lower level of significance:

(39)	Extraversion	$r = - 0.137$	sig. at 5%
(6)	Superego Strength	$r = 0.121$	" " "

It thus appears that introversion rather than extraversion is also an asset in practical teaching, contrary to the original hypothesis and that persistence is also associated with success in practical rather than theoretical work at the final examination level. On the other hand, with regard to extraversion, although none of the correlations with the social structure questionnaire are positive for the students claimed to be known, four coefficients reach significance level from the measures of status i.e. students by whom known:

(77)	No. of females by whom known very well	$r = 0.135$	sig. at 5%
(74)	No. of males by whom known very well	$r = 0.149$	" " "
(80)	No. of students by whom known very well	$r = 0.198$	" " 1%
(82)	No. of students by whom known very well and well	$r = 0.181$	" " 1%

It appears, therefore, that students who impress most upon teaching practice also impress their fellow students during the course, although this does not show itself directly in terms of extraversion as measured. This capacity for impressing others also appears at the interview stage and the correlation between it and the final teaching score is higher than that with the final theory criterion (35: $r = 0.224$ sig. at 1%).

Generally, as in the case of the final theory result, those achieving most tend to have a high level of aspiration (41: $r = 0.167$, 41: $r = 0.161$, both sig. at 1% and 85: $r = 0.156$, sig at 1%), and in this to have a low Goal Discrepancy (63) $r = - 0.298$ (sig. at 1%) but a high Judgement Discrepancy (64) $r = 0.206$ i.e. they performed better than they expected before the event, but felt they had done worse than, in reality, they had.

As in the case of the other final criterion, age appears to be advantageous (55: $r = 0.136$ sig. at 5%) and those who do best appear to suffer, or at least admit to, fewer difficulties (32): $r = - 0.224$ (sig. at 1%); these are substantially lower than those ascribed to others (37) $r = 0.155$ (sig. at 5%) and they also show a more rapid adjustment to problems (57) $r = 0.136$.

On the contrasting criterion group analyses, three variables have their scores significantly different on the basis of their sorting on the final teaching practice criterion. Two of these feature regularly in relation to the previous performances, (63) Goal Discrepancy with the students' performance exceeding their aspirations $t = 3.833$ (sig. at 5%). The third factor is the one which approached significance on the first theory performance (1) Cyclothymia, which markedly differentiates the best from the worst teachers $t = 3.313$ (sig. at 1%)

The results on the final criterion measure support the initial hypothesis, that relating to past academic performance and the success of some newer predictor variables.

Case Studies

As the Newsom report sought to temper the impersonal nature of the statistics given by the creation of six fictional children to represent selected points on the distribution considered in Half our Future so, in the present investigation and for a similar reason, a small number of students are reported upon individually. The difference, however, is that these are not representational constructs but are studies based on the actual profiles and some of the more salient features of the students who subsequently obtained distinctions, or who failed to qualify, at the end of the course.

They also are included because they point to the plethora of forces within the individual psyche and his environment which, in their dynamic interaction produce virtually unique organizations of forces, so that when two individuals are grouped together on the basis of their performance on, say, a criterion variable then it may be possible to find a predictor variable upon which they are similarly disposed but the difficulties of finding other variables where this happens follow an exponential curve. Thus, those who are placed highest and lowest ultimately cannot easily be identified on the basis of their performance on the predictor variables.

Case Study I

Student 631/60 Male. Failed final Education.

This is an interesting student in a number of respects. He comes from a north country industrial town and his accent makes his speech distinctive. His build is somewhat below average and his height about 5' 8". Generally he speaks very little and is remarkably reluctant to be drawn into conversation or discussion.

One of two sons, he attended a local grammar school in his home town and performed, according to school reports, reasonably well up to the death of his father, a manual worker who 'fell to his death', the resultant shock of which appeared to 'shatter his confidence in life'. Nevertheless, in spite of a somewhat mediocre report from the school he came to college with 6 'O' and 2 'A' level passes at G.C.E. He claims not to have considered University and to have chosen a training college course in order to be trained for a profession "which is more important to myself than mere academic qualifications".

During his first year he identified himself closely with his fellow students and ascribes the same level of rating to others as to himself in the question on student difficulties: the former yielded a difficulties' score of 16 for 'others' and 15 for 'self' fractionally below the average on the former and above on the latter. After the first teaching practice there was a general decrease in the level of estimate of 'own' difficulties but this student's showed an increased score of 4 points, whilst his estimate of 'others' difficulties nearly doubled to 28 whereas the average score on this also reduced from 13.69 to 11.31. Hence it appears that he did experience difficulties in the teaching situation and these he partly recognized but handled most of them by means of projection. This pattern persisted, with his difficulty scores increasing, but always lagging behind the level of difficulty he ascribed to other students: in both respects his scores were consistently far above those obtained from the student body as a

whole in that their difficulties showed an irregular but steady decrease.

The practice grades awarded to this student reflected his assessment in that on the first teaching practice his report was very, very poor, and he was placed in the lowest category of an eleven point scale on the second, and was finally passed on practical teaching on the lowest clear pass grade (D+) in year 3. On the academic side he failed in 6 of his 8 subjects in year 1, scraped passes in all of them in year 2, and passed in his main subject but failed in Education in year 3.

During the three years before starting in college at the age of twenty-one this student had been employed in a mail order firm, and as a Civil Service clerk, both of which pictured him as quiet and reserved. This showed itself in his answers to the questions about his own good qualities where he claimed not to have any and on another occasion distained to answer with the comment:

"I would never answer such a question as this!"

When a form of projective technique was used he used virtually the same words to describe himself as seen by a friend and enemy assuming both to be honest:

"He's conceited, boastful, has little intelligence; enjoys drinking and woman hunting to an extent that would surprise some people. He lacks character and heaven only knows why I am his friend." (alternative read: "it is no wonder I am his worst enemy.")

From this it appears that he has the capacity for exercising a critical judgement in that his activities are described as being undesirable ones in both indicated lines. College records reveal that there is more than a little truth in most of the activities claimed and the self description also tallies very well with tutors' reports, except the mention of boastfulness, but the paragraph written may be taken as an example of such a tendency. No attempt

was made by the student to relate his own qualities to those of teachers. In the case of good teachers he tended to stress breadth of mind but also mentioned, patience, interest and "a determination not to be beaten by trivialities."

This stress on a liberal approach and opposition to rules and regulations, and his refusal to accept the need to prepare lesson notes ~~are~~ fairly characteristic of his general attitude as reported by tutors. He gave the impression that he could not be bothered by the wearisome trivialities of life and regarded them as beneath his dignity. He would never argue or speak against a proposition but would rarely exert himself to complete an allotted duty. Perhaps above all he was rigid and inflexible, never laughing and smiling only rarely with a preference for situations in which there was a 'double entendre' or where someone had a misfortune. His own bad characteristics he gave as uncertainty, scepticism and 'not taking things seriously enough', indifference, laziness and 'not an over friendly approach to other people'. There was some corroboration for the earlier statements in the fact that a number of questions on the College Reaction Questionnaires were not attempted. At the same time he did indicate a desire to work with children and found his main pleasure on teaching practice in such contacts. When it came to estimating his grades in advance he tended to overestimate his performance but in retrospect he appeared to be able to judge that he had not done well, perhaps because his tutors had been at pains to impress this upon him.

The measure which above all others singles out this student is the questionnaire on social structure. Whereas the average score for the number of males known well was 27.165 his score was 5: when the average indicated the number of females known well as 13.871, his score, in spite of the self-description given earlier, was 0. When it came to a closer degree of intimacy he claimed to know only one

female very well and not one male, whereas the average scores for these categories were 2.376 and 11.365. Even more interesting was the response of his fellow students to him: only 9 men claimed to know him well and only 2 to know him very well while 12 women claimed to know him^{well} but only one to know him very well. Thus in relation to other students who had a degree of intimacy with an average number of 54 of their fellows his circle was less than half this number with 24. This was the second lowest score on this dimension for men - the lowest for men was obtained by another student who also failed and whose case is also studied, 631/1.

Certain character deficiencies were revealed at the interview stage although he did succeed in getting a good average grade. He claimed a knowledge of music but had little knowledge of any aspect: likewise his participations in clubs and societies was limited to membership. College social life failed to involve him and his reports indicate a general lack of effort and of interest.

On the practical teaching side, which was punctuated by long unexplained absences, he is described as having an odd voice, 'deep but lifeless'; he is said to lack drive and initiative and again 'never seen him smile'. His lack of preparation is faulted and a suggestion of a character deficiency again intimated by the fact that, although his lesson notes refer frequently to visual aids these are never in evidence. In spite of his claims about enjoying working with children his relationship with them is criticised and, although he is said to be adequate at story telling, his lessons are usually no more than lectures.

The concluding statement from the report of the tutor who supervised his last practice is particularly ominous.

"I have not failed him on this practice but I feel that he will become not a poor teacher, but a bad one."

This then was one student who failed not so much on account of his limited intellect, which, although his raw scores on the Cattell's Verbal and non-verbal intelligence were below the average for the male group, had enabled him to perform adequately in school, nor because of his complete inability to teach which enabled him to obtain a bare pass, but rather because his limited social and emotional development which revealed itself on the Education theory paper. This did not reveal itself on the maturity scales but he was significantly deviant on the Introversion-Extraversion and Anxiety/Neuroticism measures towards introversion and stability, possibly because he had sufficient verbal facility to select some of the desirable responses, for his general M.T.A.I. score was also fairly high and his score on Eysenck's measure of Neuroticism was only 2: his score on the 16 P.F. factor B was slightly above average in spite of the measured scores below par on the intelligence instruments. He scored low on C (i.e. Emotional, Immature and Unstable), lower on E. Submission and F. desurgency with loadings on silence, introspection, smugness etc. and a particularly low score on G. indicating lack of rigid internal standards. Finally on Cattell's second order factors he obtained a score of 62 on Introversion against the male average of 46.635 and of 55 on Neuroticism against a male mean of 45.671.

It would appear that the 16 P.F. Questionnaire and the questionnaire on the structure of the social cohesion of the sample gave the best prognosis of the student's performance generally.

Case Study II

Student 631/30 Male failed Education, Main and Supplementary finals.

This student is another interesting subject for study in that although a much more likeable person than 631/60 was generally regarded as very weak academically. Born late into a large family of Welsh stock in a Welsh market town and with an invalid father, he attended an ancient foundation Grammar school but although he took an active part in the sporting life required three attempts to obtain the 6 'O' level passes which brought him to college. The impression he created at the interview was not favourable and he entered rather by default.

Academically his college career was well nigh disastrous in that he failed in four of his seven subjects in year one, with a bare pass in one of the remaining three. During the second year there was some improvement in his teaching performance, which remained slightly below average, but received a better report than his first one although he again failed in four subjects, obtained a bare pass at 42 in two others and a top mark of 44 in the remaining one. Finally he failed on his third year teaching practice, Education, his main subject and Bilingualism although extremely Welsh in speech and outlook.

This catalogue of the student's performance may be compared with the views of his tutors, the gist of which was given by one who had extensive dealings with him as a main subject lecturer and teaching practice tutor:

"It is not merely that he is idle, but he is 'thick' as well - so 'thick' that he never really succeeds in getting away with anything".

That this was the case is borne out by ^{the} reprimand entered on his record for a misdemeanour during the second year.

At the same time he is seen as 'a pleasant character' who is 'dreamy', lacks a sense of urgency and although he works at lesson

preparation, has no originality of thought, is stereotyped in his ideas and very boring, for although he developed quite a good relationship with children he tended to be "too wrapt up in his own meditations". His sporting forte is cricket and the pace of his speech is in keeping with this for he tends to make prolonged pauses between sentences "and can be seen thinking".

In comparison, his view of himself through the eyes of a friend suggests one who "shows some consideration for others and will always help people if possible. A good sense of humour and if there is any fun making or trouble somewhere he's there". The obverse suggests a certain superficiality. "He is too fond of his pint, conceited, a typical horrible old Welshman."

At the same time he claims elsewhere that it was the social life which particularly attracted him to training college.

The superficiality referred to is to be seen in a number of his replies which suggest an imperfect reading of questions. Thus, in response to a question 'Do you approve of Corporal Punishment?' to which he had answered 'No'; he answered the corollary 'Why?' with the high principled but misplaced assertion that, "Life was not given to man so that it could be taken away."

His difficulty estimates remained invariably higher for other students than for himself and he never distinguished between his personal views and those of his fellows on any point. Initially he underestimated his own and others' difficulties in comparison with the average scores for men but overestimated both after his first experience of teaching practice. He repeated the process each teaching practice, underestimating the difficulties prior to the event and overestimating them afterwards. This suggests a limited intellect, in that he tends not to learn from previous experiences, but in terms of test performance he was only three points of raw score below the male mean on Verbal Intelligence although nearly two standard deviations

below this mean on non-verbal intelligence. Coupled with this is the fact that while he is fractionally above the mean on Cattell's Second order introversion but also above the mean on Eysenck's Extraversion, his Anxiety score on Cattell's Second order is five points above the mean and on Eysenck's Neuroticism is also clearly above the mean. This suggests a rather weak character who feels impelled to propel himself into social activities but who feels a sense of inadequacy. One tutor mentioned a streak of unreliability and his tendency to 'cover up' his deficiencies, more often than not with little success : his lie score on the Eysenck scale, a point above the male mean, supports this. On the M.T.A.I. his attitude score is favourable, as in the case of the other failure 631/60 but in terms of the Pitts Maturity Scale he is at least two standard deviation (four by the alternative scoring method) below the average for the men indicating a very high degree of emotional immaturity.

The general profile on the 16 P.F. in terms of the factors upon which he deviated most is as follows : slightly above average on factor C, towards Emotional Stability, but over a standard deviation below on E, towards Submission, and almost a similar displacement towards G - indicating a 'lack of rigid internal standards'; he had a higher than average score on Premia suggesting an effeminate sensitive streak with a lower than average score towards Relaxed security. He was particularly high in terms of Autia, which couples well with the 'absent minded' comments of his tutors and his inability to judge his teaching performances well. He was extremely low - over one standard deviation below the mean on Naïveté, Confident Adequacy and Conservatism of Temperament and over two standard deviations below the mean on Poor Self-sentiment formation and slightly below on Low Ergic Tension.

This student's relationship with other students is also interesting in that he claimed to know well 44 males and 43 females compared with other men's average of 27.165 and 13.871 but whereas they also claimed

a close degree of relationship with 11.365 males and 2.376 females he indicated only 6 males and 0 females as known very well : But he consistently underestimated his impact upon his fellow students for whereas most men were named an average of 27 times as being known well, he was mentioned 29 times and while on an average they were mentioned 14 times, he featured on 18 occasions as being very well known. In the case of the women the disparity was even more pronounced for he was mentioned by 33 of them as compared with an average mention by 22 for most males : in spite of his (modest?) contention that he did not know any women very well 12 claimed this degree of acquaintance with him as compared with 4.929 for other men!

This then was the other male failure and the test scores appear to tally with the college reports and test results in showing a somewhat insecure, but pleasant, gentle individual who entered into college social and sporting life which, in view of his limited intellectual capacity and academic weakness, was to be to the detriment of his professional activities.

Case Study III

Student 631/1 Failure in Education and Teaching.

This student differs from the others reviewed in that he was a local boy brought up in a professional class home in one of the best residential areas: his mother is a teacher and his father not mentioned but a marital separation appears to be implied. He attended one of the best grammar schools and took a very full part in its sporting and social life and belonged to virtually every sporting club: he also belonged to a number of groups outside school including a rowing club, the scouts, army cadets and church societies. When he came to college he continued with his outside interests but took very little part in the corporate life of the college.

Academically he did not do well at school obtaining four 'O' levels, then another, and failed both his 'A' levels and entered college on minimum qualifications and a low interview grade. His first year results were equally unimpressive with a clear fail in Education and in two other papers, but his second year results were worse with fail or borderline scores in five subjects. His third year saw him pass in his main subject with 44% but fail in Education and in Teaching. The disappointing thing about this student is that, although he was average on Factor B and Non Verbal Intelligence his score on Verbal intelligence places him in the six highest male scores, generally there is an air of superficiality about him and the quality of his work. Thus he enumerates has good qualities in terms of punctuality, being well dressed, wearing clean shoes and a willingness to give lifts to people in his car, but in this section he criticises himself for "Talks too much about things that usually only interest himself" and goes on to say he is over punctual, drives too fast as well as tending to act as a 'back seat driver'. He reserves some criticisms for the section where these were intended to be considered:-

"He talks too much away from his mother; argumentative; swears too much; thinks that most girls have an interest in him."

Obviously the last statement is the only one which can be quantitatively checked, although it is true to say that his appearance, from personal observation, was invariably neat. He claimed to know only 2 women students well and none very well and in return was mentioned in the first category by only 9 and by 0 in the second. With regard to men he claimed to know 7 well and 3 very well and received choices in the first group from 10, and in the second from 1. In each of these groups he is far below the average for men and as such has overvalued his appeal to others.

The school reports were not flattering but indicated he should be "quite good enough to make a competent student at training college." (This was rather in keeping with the known views of this headmaster who indicated in a newspaper article his opinion of training colleges as places "Where they teach you how to write on a black-board.") In the event he had a weak report on the first teaching practice, obtained a borderline grade on the second and failed on the third. He consistently rated his own difficulty levels as higher than average but also ascribed a higher difficulty rating to others than to himself. His estimates and judgement of his teaching grades were almost invariably on average to weak average (C to C-)

On the 16 P.F. Second Order Factors he was placed, as on the Eysenck scale on the extravert side by a half and almost 1 s.d. respectively; he was average on Cattell's Anxiety, had a lower than average degree of Neuroticism, but a Lie score of 3. Looking at the scores on the 16 P.F.'s prime factors, it is evident that very few are deviant to any extent and then almost invariably in a 'socially acceptable' direction: Thus, he is very high in Cyclothymia, a good average on Intelligence and Emotional Stability, appears slightly

Submissive, is quite high on Surgency and Super-Ego strength, inclines towards Parmia and has a strong Harria score as well as on Protension and Praxernia. His most deviant score, is perhaps, not surprisingly on Shrewdness, while he is also Conservative, Self sufficient, has High self sentiment - Formation and rather low Ergic Tension.

The difficulty with this profile is that much of it appears correct but there appears to be some disagreement between others' assessment of his character qualities and those aspects of it measured here: probably the element of shrewdness and intelligence prompted him to give the 'right' answers in the instruments. The cyclothymic score is probably accurate and it appears that most of his social contacts were outside the college. Exerpts from the report of tutors help to complete the picture.

This student tended to be 'academically weak' and was 'lazy, unreliable and unjustifiably confident' as well as 'very personable'. Coercion alone produced work and then it was unsatisfactory. In his teaching 'he spoke clearly, but loudly and authoritatively and had no resources of enthusiasm or energy, let alone knowledge with which he could engage the children's interests'. He was found to be unco-operative and exercised no judgement of quality.

Without access to the test results on the intelligence of this student it appears that he was judged as limited in intellect and certainly as deficient in the character qualities required for applying himself to hard work : with this test information available it appears even more of a tragedy that here was a student with the necessary intellectual capacity to cope with the demands of the work, but with evidently no real intention of working or making a significant contribution to any aspect of college life.

Case Study IV

Student 631/147. Female Failed Practical Teaching; borderline passes in Main and Education finals.

This student obtained 7 'O' levels but in most other respects was regarded as a rather weak prospect for teaching both by her school and at the selection interview stage. Born and educated previously in London she came from a superior professional home but had a medical history in term of illnesses with 'nervous' connections - asthma and eczema.

On College entry she was regarded as 'ungrammatical, inarticulate' and 'generally immature', while academically she was not more than 'moderate': at the end of her first year she failed in two subjects, barely passed in them at the 2nd year and finally passed her 3rd year main subject by one mark but achieved only a borderline mark on Education theory and failed on practical teaching.

The reports on her teaching appear to take the view that she regards herself as somewhat aloof and take the form of unfavourable comments about her lack of warmth, humour and imagination. She is said to have been able to understand the situation in which she found herself and to have a singularly poor relationship with children : as one tutor commented "I don't think she really likes children." She was also said to make no attempt to understand them or to respect them as thinking beings and she had neither authority in her bearing nor a voice to inspire obedience. The tutor who supervised her final practice worked very hard to help her, but concluded that he doubted whether she would ever succeed.

This reporting of the views of others has been given at some length because it is interesting to compare it with the view given by the girl of herself : she admits on the bad side that,

"She is unsociable, she won't put herself out for anyone.

"When she is roused she has a bad temper. She likes to be on her own. She dislikes making new friends and hangs on to her old ones."

Thus far her opinion is in line with that of outside observers, of a rather stiff, rigid, cold and aloof personality. On the other hand she has another side to her nature and gives what is apparently the explanation for much of her conduct.

"She will do anything for you. She never tells lies. She is very quiet, because she is shy, but once you know her she will stick by you. She enjoys helping people, but because she is shy, she finds difficulty in making friends."

This shyness she mentions frequently in the College Reaction Questionnaire and describes her own short comings in terms of 'self consciousness', 'lack of self-confidence' and occasionally, 'laziness' and 'lack of imagination'.

It appears, therefore, as if this student is by no means as insensitive as she has been supposed, and that it is her high degree of sensitivity and her consequent feeling of vulnerability that cause her to safeguard herself by insulating herself from too close contact with others. This appears to be corroborated by the response to the instruction to list in order of importance (a) the subject which the student would teach, (b) the techniques to be used in teaching them, and (c) the pupils to be taught: the order of priorities selected by this student was (b), (a), (c) so that the academic and methodological elements took precedence over the recipients of the student's attention.

In terms of evaluating her own difficulties and performance levels, she estimated consistently that her difficulties were lower than average as well as giving a lower assessment to others' difficulties in relation to the average actually calculated. There was a slight decline in her assessment of her final grades in that by the second year she reduced this from a 'pass' to a 'bare pass'.

Since the impact of the student upon the peer group and the

range and quality of acquaintance incidence has been revealing in the other subjects studied in this section. ^{it is of interest to examine} this data for this student. She indicated that she knew 27 males well and 4 very well, which is approximately double the figure for most women, and she received mention in return by 5 and 0 men, compared with an average female mention by men of 11 and 2. In terms of her fellow women students she claimed to know 66 well and 14 very well compared with most women's claims of 28 and 12: in turn she was mentioned by 15 and 6 women.

Both in terms of her claims in relation to others and the choices she received from others as compared with most women, this student made claims which were exaggerated and which were not borne out by the data from others. It may, of course, be that these were one-sided i.e. she felt a degree of acquaintance which was not reciprocal, or it could be that she attempted to compensate for her acknowledged shyness by making larger claims than most.

In terms of her personality profile on the 16 P.F. questionnaire, she was, surprisingly only by a slight fraction inclined to Schizothymia and over 1 s.d. above average on Factor B (she was almost a similar amount below the mean on non-verbal intelligence and the same distance above on the Verbal test.). She was near average on the Ego Strength and on E tended towards the Submission side, and so too on G she was only fractionally on the Undependable side. Her deviation on Factor F was more marked, being a standard deviation towards Desurgency, and she had a similar placement on H towards Threctia. In spite of these last two, which are very well in keeping with our previously discussed views of the student, she had a very low score on Factor I: since this measures high on Premsia, her score of 7, two s.d.'s below the mean of 12.506 indicates a high degree of toughness and realism as components of Harria: this score was

complemented by a displacement towards Praxernia of a slightly lower order of magnitude on Factor M while L showed only a slight tendency towards Protension and N a similar inclination towards Naïveté. The last of the externally validated factors, O, showed a marked deviation towards Guilt Proneness. In the Q responses she appears as conservative, self-sufficient with a fair measure of self-sentiment formation but with her highest displacement, with a score of 23 to the women's mean of 14 (sd. = 4.717.), on Ergic Tension.

Equally interesting are this student's results on the Cattell second-order Factors where she appears as average on Anxiety and as slightly Introverted: compared with this, her scores on Eysenck's questionnaire place her as lower than average on Neuroticism but slightly above on Extraversion. Perhaps even more interesting is her Lie score of 4 on this last named instrument, which may not only account for the slight discrepancy on Introversion-Extraversion, but may suggest that she was prepared to use her intelligence in selecting other than the 'true' answers. This explanation is selected in view of her intelligence score results rather than the one which might suggest that she vacillated or was unable to think clearly about herself: it does, however, permit the interpretation that she sought to project the best picture of herself but was insufficiently intelligent to maintain consistency in this.

In other directions this student was unexceptional having an average score on the M.T.A.I. and an average one on one of the Pitts indices and was nearly 1 s.d. below the mean on the other (M-I).

This student was, incidentally, heavily emotionally involved with a male student over whom the writer exercised tutorial supervision. He was a man of limited intellect compared with her and gave transparently 'socially desirable' responses to much of the 16 P.F. In fact he was extremely inflexible and very, very nervous to the extent of being physically sick during school practice and prior to examinations. To some extent this match was an attraction of

similarities with the girl being clever enough to determine to make the boy appear masculine in relation to her. In reality he was, if anything the weaker vessel but, possibly as a result of her instigation worked hard in his final year and passed in his theoretical subjects and practical teaching, if not well, then at least comfortably. It is interesting to speculate whether if, these two had not come together then both would have passed, or whether both would have failed. In my estimation the latter is the most likely.

Case Study V

Student 631/176 Female failed in practical teaching.

This student was a strange paradox. Born of professional parents within a short distance of Cardiff she lived for a number of years in London. Of decidedly Jewish appearance she practised Christianity and had strong views about toleration between religious communities and people of different races. It later transpired that both she and her younger sister had been adopted and in view of their adoptive father's breakdown in health the 'mother' had to return to work. She herself was unfortunate in that her health was not strong and she lost some time from work, and teaching practice from glandular and scarlet fevers.

At the end of her first year she failed in one subject and had a bare pass in another : the second year she did better, passing in all subjects if only by relatively narrow margins in most cases (one was bare pass and the highest 61) at the final examination she passed in Education theory by a comfortable margin and secured a credit in her main subject, but she was failed on her practical teaching.

In school she had been ^{an} ordinary, non-executive member of the choir, film society and Christian fellowship and was classed as having only moderate ability in view of her school attainment (4 'O' + 2 + 1 : 1 'A') although she "was suspected to have potential ability." In spite of the fact that she was said to be "lacking in poise and confidence" and "was unlikely to give a good first impression," she secured a high interview grade which placed her in the top 4 women.

Her view of herself on the favourable side was :-

"Intelligent, likes people of all races and religions, makes good conversation, has a good sense of humour and personality. Generally tidy in appearance and ways, sometimes quick tempered and moody."

On the unfavourable side :-

"Lazy, very quick tempered, not interested in her work, could

"pay more attention in lectures and might then not find them so boring. Always borrowing things, stays in bed too long in the morning, leads too hectic a social life."

Taking the question of intelligence first, she was one sigma above the mean on Factor B, a little below on the non-verbal test and on the Verbal intelligence test her score was of the highest, exceeded by only one other woman and one male student. Paradoxically again her vocabulary score on this last test was not nearly so high and suggests that it was in the reasoning element rather than on language component, which is perhaps more prone to be influenced by application or learning, that her strength was found. Thus she seems accurate about her intellectual level. With regard to the circle of her acquaintance, she claimed to know only 2 men well and 0 very well compared with average women's score of 10.835 and 2.606 for each category : in the case of women she claimed to know 16 well and 7 very well, again compared with average women's scores for each of these categories of 27.959 and 12.129, so in spite of outward looking sociable claims, the people she names are far less than those of her women contemporaries both in terms of women and of men.

From the point of view of the impact she made upon others, she was not mentioned by any of the men either in terms of being known well or very well, compared with the average mention by men of 14 and 2 women in the two respective categories. In the case of the women she was indicated as known well by 18 and as known very well by 13 compared with the average female's receipt of 28 and 12 namings in the two categories.

It appears, therefore, that there is some considerable difference between her view of herself and others' views of her, in that she had overestimated the impact of her personality in every case except one. There is also clear evidence of a sex difference in that her impact upon the males has been negligible, while in relation to other females she tends to have fewer acquaintances, but an average number of closer contacts. The contradiction becomes rather more apparent when

considered in relation to the main Anxiety / neuroticism and Introversion-extraversion scores. On these she appears to have a fairly high degree of Anxiety (Cattell's second order factor) but not to be Neurotic (Eysenck) and on both measures she appears as an Extravert by one standard deviation.

Turning to the loadings on the primary factors of the 16 P.F., she had a very high score on Cyclothymia, 2 s.d.'s above the women's mean, was rather dissatisfied emotionally and was clearly dominant (1 s.d. above the mean on F.) and was highly placed on Surgency. One of the most revealing scores was on Factor H, where she had a low Threctia score of 4 compared with the mean of 10.629 and s.d. of 4.5, indicating a high degree of shyness and timidity : at the same time she was almost equally far down on the 'tough realistic' side of Premsia - Harria and on the low average side of Protension. She was clearly inclined towards Praxemia (1 s.d.), almost twice as far towards Shrewdness, and was average on all other qualities except that she was strongly Radical (1 s.d.), had a fair measure of Self Sentiment Formation and rather low Ergic Tension.

It then appears that this student has certain feelings of inferiority coupled with some sense of idealism, which drives her towards sociability, but she rather fails in her attempts to get a response from others. At the same time her comparatively high level of intellectual ability enables her to recognize what is happening, but instead of sublimating her nervous energies into creative channels, she rather tended to dissipate her energies in a non-productive fashion. Thus although her M.T.A.I. score is reasonably high she aims at an average performance in all her self estimates and produced comments on the following pattern from a number of her tutors:

" Withdrawn; monotonous voice; appears half-dazed; has no contact at all with children: has no discipline or clear control. She was difficult to establish contact with. Articulate in discussions but

produces scrappy written work, except when she feels inclined to make the effort, when it is excellent."

With regard to her perception of the difficulties faced by herself and her fellows, she invariably had higher scores than most students and classed other students as having greater problems than her own: the exception was her self-estimate after her first teaching practice where she classed her own difficulties as slight. Her self criticism comments on the College Reaction Questionnaire concur with tutorial comments about her. 'Lazy with work', 'quick-tempered' and 'unsociable' and generally 'Unwillingness to learn'.

The tragedy of this student was the malformation of the affective side of her personality, which failed to support the high level of cognitive function of which she was capable on paper.

Case Study VI

Student 631/4 Female Distinction in Teaching and Education

This student in many ways exemplifies the kind of student who manages to work hard as well as playing hard and succeeds in getting the most out of both. Born and educated in South Wales coal mining valley this student has a father who, works in the same profession as the parent of the failure 631/176.

In spite of the fact that she obtained 9 'O' level passes in G.C.E. at one attempt, she was graded by her school as a good average pupil. There she had served in a number of executive positions, both on the administrative and recreational side, and was thought highly of in terms of her pleasantness and willingness to help. She also led a full out-of-school social life belonging to chapel clubs and the guides. These qualities were evident at the interview when she was deemed to be intelligent, responsive and friendly.

The progress of this student through college was steady rather than spectacular, for although she passed all her examinations each year, her lowest mark in Year I was only two marks above the pass mark: in Year 2 she had a margin of four marks in her weakest subject, while in the third it was six marks. The typical remarks made of her by her tutors generally, however, testify to her academic soundness and attribute it to her capacity for really concentrated effort which invariably results in the production of meticulous work. At the same time she managed to take a very full part in the college community life, and was a member of a number of academic and social clubs as well as the captain of a women's sporting club and went on work-camp weekends.

Her view of herself includes the creditable side :-

"I am always willing to give an honest opinion and candid advice. I am generous but inclined to be a bit touchy on occasion. I am always willing to listen to another person's point of view but never afraid to express my own views.*"

On the 16 P.F. primary factors she was fairly high on Cyclothymia, fairly average on Intelligence but well over one and a half s.d.'s towards Dissatisfied Emotionality on C and 1 s.d. towards Submission on E. On F. she was even more deviant, being 2 s.d.'s towards Desurgency, but slightly above the mean on Super-Ego Strength and a similar distance below it towards Threctia on H. Another markedly deviant score ($1\frac{1}{2}$ s.d.'s) was on Factor 1 in the direction of Premsia, while a score a third nearer the mean on the Relaxed Security side was found on L. So, on M, she appears to be clearly inclined towards Praxernia (1 s.d.) to be average on Shrewdness - Sophistication but suffering from Guilt Proneness (1 s.d.) With a fairly average degree of Radicalism on Q_1 and clearly self sufficient on Q_2 but with a slightly less average degree of Self-sentiment formation, she had a very high degree of Ergic Tension - as high on this last measure as the female failure 631/147.

Thus this student is not one with a simple personality profile but combines a degree of emotional dissatisfaction and energy with a measure of strength of character : she thus appears idealistic and fears failure and has the reserves of energy to ensure that this will not occur. Finally her outlook reflects itself as slightly more mature than the average on the measures employed.

Apparently she is aware of her own strengths and weaknesses and this is what classes her as an introvert, but her participation in activities of all kinds makes her generally regarded by others as extraverted.

Case Study VII

Student 631/61. Male Distinction in Teaching, Education and Main subject.

This student came from the same general North County region and from a similar industrial town as student 631/60 who failed. Like him too he was more mature than the average student in chronological terms, being nearly 24 when he started in College. Superficially too, there is a certain similarity between the two men in that both are quiet individuals, but here the resemblance ends, for whereas the other student alluded to was generally regarded as a most undesirable individual and was asked by the late principal, on one occasion, at least, to consider withdrawing from the course, this student obtained the highest possible grades (A+) in his final practical and theory work and in this sense was the student of the year.

Of average height but so broad and muscular that he gave the impression of being shorter than this, he was born into a large working-class family and given little encouragement in school. He failed his 11+ and went to a secondary modern where he was described as having average ability but as being very reliable and having great determination. Having left school with no formal qualifications he started working as a labourer. In one of a number of interviews with him, he indicated that it was this taste of really hard uncongenial work and the prospect of doing nothing that really made him determine to "better himself". Whilst still working during the day at this hard manual work he started attending evening classes and obtained first one 'O' level, then two, and at a third attempt three passes (1 + 2 + 3). His tenacity and formal qualifications enabled him to become apprenticed as an electrician, but he persevered with his studies and spent a year full time, supporting himself financially,

as a student in a College of Further Education. He obtained two A level passes one of which was marked at 75%, and in the report from the technical College he had first attended, his perseverance was praised and the example given of his working alone for 'O' level history, and passing it, using the reading list provided but without tutorial supervision, when the class had folded.

His college career followed the same pattern in that he interviewed very well and in his first year results showed marks in the 60 - 80 range, except in mathematics which he found unfamiliar and difficult, and his teaching report was one of the four best given to men students. By the second year he had removed his weakness in mathematics and again had a teaching report which was most favourable, if not as good as on the first practice. At the end of the third year he obtained the highest grade on Teaching and a high distinction work in Education Theory and also in his main subject.

Since this report is so flattering it may be as well to give an indication of the refreshing simplicity and quiet candour of the man from his self report as seen by his friend, where he writes in the first person and his enemy, in which he uses the third person.

"I am shy. I am erect and physically well developed. I am interested in sex relations. I am clean but untidy, often thoughtless and self centred. Strong but greedy. Have faith in 'God'. Proud and confident."

"He makes a slave of himself to food. Projects artificially his physique. Not tidy enough. Self-centred. Egoist."

Several times in the College Reaction Questionnaires he returned to the 'self criticism about 'having poor sex relations', being 'self conscious' or 'inclined to be embarrassed,' and 'not fully mature', but he also sees himself as a 'strong individual personality' blessed with 'the ability to try hard.' Time and again he expressed the notion of teaching as a vocation and his strong desire to work with children and the slight suggestion that this might, at least in part be a

be a compensatory outlet for his difficulty in mixing with adult females. (In fact he tended to be rather solitary even with regard to men, working alone in the library and sitting apart in class). His main hope in college, apart from professional success was for romance. The latter was not to be fulfilled to any significant extent but the former was and he consistently had a higher level of aspiration and a better judgement of his performance than most of his fellow students.

To examine the actual position with regard to the relationship between this student and his fellows reference can be made to the instrument on Social Structure. On this he had the rather unusual pattern of claiming to know no females either well or very well ~~and~~ ~~of~~ indicating only 3 males as known well, but 32 as known very well. A closer examination of these proved to be fellow members in the specialist course in which he was engaged: these figures compare with those for other males who on average, and in rounded terms, named 14 females as known well and 2 as known very well and 27 men as known well and 11 as known very well. On the other hand he was named as being known well and very well by 38 and 9 men respectively compared with average male score of 27 and 14 while he was placed in these categories by 26 and 2 women compared with 18 and 12 for most men. Thus it does seem that there is some truth in his contention about poor social relationships with females in that average number of cases. At the same time his difficulties are more general in that the extent of his claims to a high degree of association with his fellow men students is by no means reciprocated.

One last word on this social factor: Subsequent to the administration of the Social Structure Questionnaire this student took part in a number of student variety shows and revealed an unexpected talent for gentle satire in portraying members of Staff in Shakespearian roles. This brought him considerable acclaim and it seems highly

probable that his name would have featured more prominently if the instrument had been administered at a later date after this event.

The impression this student created was of being endowed with limited intellectual capacity but with a high degree of perseverance. This former view is supported by the three measures of intelligence, Cattell's 16 P.F., Non verbal and Verbal Intelligence, on each of which he was up to a standard deviation below the mean for the male group and yet on the Vocabulary items on the last named test he was 1 point above average which accords very well with the previous assertion. At the same time his M.T.A.I. score was between those of the two male failures, which could indicate his inability to select the desirable responses but in view of his good average vocabulary score it is probable that he gave answers he felt to be true, knowing their import, but was not prepared to compromise his views.

Turning to the Eysenckian and Cattellian personality instruments there appears to be a considerable measure of agreement. On the former he was placed over 1 standard deviation towards Neuroticism and nearly half a s.d. towards Introversion: On the latter's Second Order factors he was nearer the mean, but on the Anxiety side, and nearly one s.d. from the mean towards Introversion. This again agrees well with his view of himself.

Selecting only those factors upon which he was markedly deviant, he appears to Schizothymic, inclined towards Parmia and more inclined towards Protension and particularly Naïveté: he also appears as slightly Radical and combines a slightly below average Self-sentiment formation with a similar measure of High Ergic Tension. But the most deviant score of all - over 2 s.d.'s was towards Self-sufficiency. If Q_3 and Q_4 responses are interpreted as drive elements then all the other scores conform to an almost incredibly high degree with tutorial and other interview assessments by the writer of this student.

His final reports complete the picture : "He is rugged in appearance and where his ability is limited he compensates by conscientious application and achieved a high standard of work by meticulous preparation. He was able to form close contact with children and obtain a maximum response from them." An individualist, he showed exceptional promise as a student and secured a lectureship in a college at the conclusion of his training.

CHAPTER XIV

CONCLUSION: AN EXAMINATION OF HYPOTHESESI.1. That Personality Factors are related to the performance of students in their final theoretical and practical examinations.

A number of personality factors have been identified which are associated with the performance of students in both practical and theoretical aspects of their work in college. In all 23 established personality predictors were used with the 10 criteria indicated.

<u>Criterion</u>	<u>Predictor</u>	<u>r</u>	<u>Sig.</u>
(19) Education Theory Year I	(1) Cyclothymia	0.151	5%
	(5) Surgency	0.123	5%
(89) Education Theory Year 2	(8) Premsia	0.159	5%
(90) Education Theory Year 3	(39) Extraversion	0.226	1%
(2) English Year I	(14) Q2 Self Sufficiency	0.297	1%
	(2) General Intelligence	0.139	5%
	(10) Autia	0.232	1%
	(1) Cyclothymia	0.141	5%
(87) English Year 2	(10) Autia	0.273	1%
	(14) Q2 Self Sufficiency	0.204	1%
	(2) General Intelligence	0.188	1%
	(8) Premsia	0.130	5%
	(6) Superego Strength	0.193	1%
(22) Mathematics Year I	(6) Superego Strength	0.129	5%
(46) Teaching Year I	(6) Superego Strength	0.162	1%
	(7) Parmia	0.163	1%
(61) Teaching Year 2	(6) Superego Strength	0.209	1%
(91) Teaching Year 3	(6) Superego Strength	0.121	5%
	(39) Eysenck Extraversion	0.137	5%

The interview also succeeds in identifying those most likely to perform well in the final practical and theory examinations :-

(35) Interview grade	(61) Teaching Year 2	0.190	1%
	(91) Teaching Year 3	0.219	1%
	(90) Educ. Year 3	0.224	1%

Conclusion: Of the twenty-three established personality measures used ten are significantly related, beyond the 5% level, with measures of student performance, six of them occurring in association with two criteria and the most important, which appears to be superego strength, featuring four times. The hypothesis is therefore supported.

2. That Emotional Maturity is an important factor in the more successful performances of students

			Sig.
(51) Pitts E.M. Scale M-I	(87) English Year 2	$r = 0.305$	1%
	(19) Educ. Year 1	$r = 0.266$	"
	(20) English Year 1	$r = 0.233$	"
	(89) Educ. Year 2	$r = 0.171$	"
(52) Pitts E.M. Scale $\frac{M}{M+I}$	(87) English Year 2	$r = 0.263$	"
	(20) English Year 1	$r = 0.278$	"
	(19) Educ. Year 1	$r = 0.194$	"
	(89) Educ. Year 2	$r = 0.123$	5%
(51 + 52) Pitts E.M. Scale	(N.S. Practical Teaching First + Second years or Third years)		

Conclusion: Emotional maturity as measured by the Pitts E.M. Scale is closely related to academic performance of students as measured by English and Education results in the first two years. No such relationship was found for Practical Teaching or for 3rd year Education results.

3. That individuals displaying marked introvert traits perform best in theoretical examinations.

One correlation with academic performance reaches significance level on Cattell's second order introversion and this is in a negative direction:

(19) Education Year I, $r = -0.141$ (sig. at 5%).

But (39) Eysenck's Extraversion is negatively correlated with

(20) English Year I $r = -0.174$ (sig. at 1%), with (87) English

Year 2, $r = -0.134$ (sig. at 5%) and with (90) Education Year 3,

$r = -0.226$ (sig. at 1%) which indicates support for the hypothesis.

A number of other theoretical performance measures are also negatively related to Eysenck's extraversion, although they do not reach the 5%

level of significance. On balance, therefore, in terms of correlation coefficients there is support for the hypothesis.

When the upper and lower 10% criterion analysis technique was applied, using in turn Eysenck's Extraversion and Cattell's Introversion, none of the scores on the measures of academic performance reached significance level at the 5% level.

Conclusion: Although the most highly introverted students do not appear to be significantly superior to the most extraverted group in theoretical examinations there is a general tendency for introversion to be associated with successful performance in such examinations. The hypothesis is accordingly generally supported.

4. That those with strong extravert tendencies succeed best in practical teaching situations.

As with the previous hypothesis the evidence for this one is somewhat inconclusive: none of the Cattellian Second Order introversion factor correlations reaches the 5% level of significance, but all the coefficients are negative. Similarly, the teaching performances sorted on this criterion fail to reach this level of significance.

On Eysenck's Extraversion, the coefficients are negative contrary to the hypothesis, and, although the contrasting criterion analysis does not reach the 5% level of significance, one correlation coefficient, with (91) Teaching Year 3, has reached this level $r = -0.137$

Conclusion: Although the evidence appears to tend to link introversion rather than extroversion with success in practical teaching, at the same time there is a discernable trend from the Social Structure Questionnaire which suggests that this and the former hypothesis are well founded, but the correlations with teaching performance do not reach significance level.

The hypothesis, therefore, remains unproven.

5. That a moderate degree of neuroticism serves as a spur to effort and thus provides good performance in Theory and Practice.

This hypothesis was not tested following the results obtained from testing the general relationship between neuroticism and

student performance. No significant correlation was observed between factor C and theory or teaching results, nor between Cattell's Second Order factor of Anxiety and the criteria, nor between Eysenck's Neuroticism and the criteria.

Conclusion: No evidence was obtained to support or disprove the hypothesis.

6. That a high neuroticism score interferes with effective action and this produces a greater effect in practical than in theoretical examinations.

As indicated in relation to the previous hypothesis neuroticism was not found to be generally related at a significant level with any of the performance measures. When extreme score contrasting groups were obtained on the basis of first the criterion of Second-order Anxiety and then Neuroticism, no significant differences were found between them on any of the academic performance measures in theory or practical work.

Conclusion: The hypothesis is not supported.

- II. 1. That Students' own estimates of their Final performances are substantially correct.

CRITERION

- (41) Estimate of Final theory (90) Final Educ. $r = 0.213$ sig. at 1%
 (22) Final English $r = 0.209$ " " "

Correlations with first year performances in English and Education are with Second year Education are all significant beyond 1%.

The correlations with final teaching practice grades of students estimates do not reach the lower significance level. At the same time the correlation with the initial estimate of performance and first year practice results is $r = 0.350$ (sig. at 1%) and the correlation with the second year results is $r = 0.206$ and with the final grades $r = 0.161$ (both sig. at 1%).

The Judgement after the first practice correlates with the obtained results $r = 0.333$ (sig. at 1%) and with the second year results at $r = 0.154$ (sig. at 5%) but the correlation with the third year result

is insignificant. The estimate of the second practice after the event correlates with it $r = 0.356$ (sig. at 1%) and this same estimate correlates at the 5% level with the final practice criterion $r = 0.156$, but the estimate of the final grade although positive does not reach the lower level of significance.

Conclusion: Students are able to some limited extent to estimate their academic performances in theory and practice during the first two years in college and these estimates agree well with their final performances. But the students are more successful in estimating their performance in 'theory' than in 'practice' when the criterion is third year performance. The hypothesis, therefore, is partially supported.

The second part of this hypothesis relating to 'high introvert low neurotics' was not examined.

III. 1. That Past Academic Performance is significantly related to theory grades but not to practical teaching grades.

(33) 'O' level passes G.C.E.		<u>Sig.</u>
(19) Educ. year I	$r = 0.293$	1%
(89) Educ. year 2	$r = 0.188$	1%
(88) Maths. year 2	$r = 0.160$	1%
(22) Maths. year I	$r = 1.122$	5%

(33) 'O' level passes G.C.E.		
N.S. with Practical Teaching		
Grades years 1 and 2.		
(91) Teaching Year 3	.131	5%

(34) 'A' level passes G.C.E.		
(91) Educ. year I	$r = 0.336$	1%
(20) English Year I	$r = 0.308$	1%
(87) English Year 2	$r = 0.282$	1%
(89) Educ. Year 2	$r = 0.218$	1%
(90) Educ. Year 3	$r = 0.170$	1%

(34) 'A' level passes G.C.E.		
(61) Teaching Year 2	$r = 0.375$	1%
(91) Teaching Year 3	$r = 0.124$	5%

Conclusion: Past academic performance is a good predictor both of

college theory and practical grades, particularly where 'A' level results are concerned.

2. That interview grades at entry are successful predictors of performance.

(35) Interview Grade	(90) Educ. Year 3	$r = 0.219$
	(61) Teaching Year 2	$r = 0.190$
	(91) Teaching Year 3	$r = 0.224$

Conclusion: The Interview predicts the second year and third year teaching practice results but does not succeed in predicting the first year practical results, or the first and second year theory results: it does, however, predict the third year theory result in Education and as such appears to be effective. Other predictors correlate more highly with the final criteria. Therefore, the hypothesis relating to the Interview is supported.

IV. That certain experimental questionnaires, self rating scales and estimates by students of the degree of difficulty found in the course may be related to College theory and practice results.

				<u>Sig.</u>
(26) M.T.A.I. Pro. Scores	(87) English year 2	$r = 0.272$		1%
	(20) English year 1	$r = 0.269$		1%
(28) M.T.A.I. Final Scores	(20) English year 1	$r = 0.261$		1%
	(87) English year 2	$r = 0.260$		1%
(26) M.T.A.I. Pro. Scores	(1) Cyclothymia	$r = 0.261$		1%
	(10) Autia	$r = 0.233$		1%
(28) M.T.A.I. Final Scores	(1) Cyclothymia	$r = 0.159$		5%
	(10) Autia	$r = 0.244$		1%
	(13) Q1 Radicalism	$r = 0.131$		5%
(29) (30) (31)	N.S. with Theory and Practical Teaching.			
(32) Estimate of Own difficulties				
	(91) Teaching Year 3	$r = 0.224$		1%
	(90) Educ. Year 3	$r = 0.129$		5%
(59) Others' difficulty Pre 2nd Prac.				
	(20) English Year I	$r = 0.168$		1%
(60) Own difficulty Pre 2nd Prac.				
	(20) English Year I	$r = 0.125$		5%
(83) Other's difficulty After 2nd Prac.				
	(20) English Year I	$r = 0.162$		1%

				<u>Sig.</u>
(84) Own difficulty after 2nd Prac.				
	(20) English Year I	$r = 0.212$		1%
	(87) English Year 2	$r = 0.144$		5%
(36) Others-Own Difficulties.				
Christmas	(19) Educ. Year I	$r = 0.196$		1%
	(90) Educ. Year 3	$r = 0.157$		5%
(37) Others-Own Summer				
	(61) Teaching Year 2	$r = 0.228$		1%
	(46) Teaching Year 1	$r = 0.195$		1%
(62) Others-Own Pre 2nd Prac.				
(56) Change in Own difficulties N.S. with Theory or Prac. Results.				
(57) Change in Others difficulties (46) Teaching Yr. I				
		$r = 0.129$		5%
(47) Deviation from sex mean (19) Educ. Year I				
		$r = 0.125$		5%
(48) Deviation from General N.S.				
(49) Deviation from each sex summer N.S.				
(50) Deviation from General summer N.S.				

Conclusion: M.T.A.I. scores are highly related to performance in English (the 'pro scores' being more closely associated than the Final scores). But, in agreement with the findings of the majority of researchers in this country the scores do not accord with performances in education or practical teaching.

The assessments of one's own and others' difficulties are significantly related to final teaching success and Education theory: both estimates are linked with success in English. Apart from in the initial estimate of difficulties, which shows that those with the lowest self rated difficulties ultimately perform best, the tendency is for those who have high levels of difficulties to perform best.

The discrepancy between the estimates of one's own and others' difficulties tends to be highly related to success in Education theory and practical teaching, i.e. when a higher level of difficulty is ascribed to others than to oneself.

The highest relationship obtained in this area was between the Judgement Discrepancy and Year I Teaching indicating a higher level of aspiration than of performance: this same measure was highly related to the Teaching results of years 2 and 3.

On balance, therefore, from the results obtained from the other predictor measures the hypothesis is supported.

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A P P E N D I X

- A. Comparative Scores on the 16. P.F.Q.
- B. Cattell's 16.P.F.Q. Form A.
- C. Eysenck's Personality Inventory
- D. Pitts' E.M. Scale.
- E. The M.T.A.I.
- F. Cattell's Verbal Intelligence Test III. A.
- G. Cattell's Test of g : Culture Fair.
- H. An early copy of the C.R.Q.
- K. A later copy of the C.R.Q.

APPENDIX A

Comparative Scores on the 16 P.F.Q.

Variable Factor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	A	B	C	E	F	G	H	I	L	M	N	O	Q ₁	Q ₂	Q ₃	Q ₄
16 P.F.Handbook Students	6.8	6.1	7.3	7.2	6.5	4.1	7.6	5.9	5.2	5.7	5.5	4.4	5.7	4.5	6.1	6.2
General	7.8	6.1	7.1	5.6	6.2	4.4	7.1	7.2	7.2	5.2	5.5	4.5	4.5	4.8	6.2	6.4
Teachers																
Students	6.1	5.5	5.3	4.2	4.0	5.8	5.0	6.7	6.7	5.0	5.5	5.5	4.4	5.8	5.6	5.5
Warburton																
U.S.	7.3	6.0	6.9	5.2	6.1	4.2	7.0	7.0	4.0	5.1	5.2	4.0	4.3	4.3	6.1	6.1
U.K.	6.5	6.5	3.5	3.1	4.6	5.0	5.3	7.9	6.0	6.6	4.0	8.0	5.2	6.1	6.2	7.4
OWN	6.5	6.0	2.0	4.5	4.2	4.0	4.0	8.0	7.3	7.9	4.0	8.0	6.0	6.1	4.1	7.9
Stand.Tables																
Men	6.0	6.0	5.	5.5	5.2	5.7	5.0	5.2	5.7	6.	5.6	5.2	5.2	5.1	5.1	6.0
General																
Women	6.0	6.0	5.	5.9	5.2	5.7	5.1	5.7	5.2	5.7	5.6	5.6	5.7	6.0	5.5	6.0
Men	5.8	5.8	5.3	5.9	5.7	5.7	5.0	5.7	5.5	5.7	6.0	6.0	5.7	6.0	5.0	5.0
Students																
Women	5.0	5.8	5.7	5.7	5.3	5.9	5.1	5.0	5.5	5.4	5.2	6.0	5.6	5.7	5.6	5.8
A.G.J. Mean Raw Scores	11.8	8.52	13.95	11.85	16.04	11.75	10.70	11.56	9.35	12.81	10.14	12.25	9.57	10.71	9.85	13.78
Men	10.612-8.47	14.59	14.17	15.53	11.87	10.82	9.66	10.04	11.41	10.21	11.09	10.26	10.47	9.81	9.81	13.32
Women	12.39	8.55	13.33	10.69	16.29	11.69	10.63	12.51	9.01	13.51	10.11	12.84	9.23	10.84	9.87	14.01
A.G.J. Stens on																
Men	6.	5.2	5.	6.	5.5	4.9	4.8	5.0	6.0	5.4	5.2	6.0	6.0	6.0	5.0	6.0
St. Tables.																
Women	5.2	6.5	5.3	5.7	6.0	5.0	5.0	5.5	6.0	6.0	5.1	6.8	6.2	6.0	4.8	6.0

WHAT TO DO: Inside this booklet are some questions to see what attitudes and interests you have. There are no "right" and "wrong" answers because everyone has the right to his own views. To be able to get the best advice from your results, you will want to answer them exactly and truly.

If a separate "Answer Sheet" has not been given to you, turn this booklet over and tear off the Answer Sheet on the back page.

Write your name and other particulars at the top of the Answer Sheet.

First, you should answer the four sample questions below so that you can see whether you need to ask anything before starting. Although you are to read the questions in this booklet, you must record your answers on the answer sheet (alongside the same number as in the booklet).

There are three possible answers to each question. Read the following examples and mark your answers at the top of your answer sheet where it says "Examples." Put a mark, x, in the left-hand box if your answer choice is the "a" answer, in the middle box if your answer choice is the "b" answer, and in the right-hand box if you choose the "c" answer.

EXAMPLES:

1. I like to watch team games. (a) yes, (b) occasionally, (c) no.
2. I prefer people who:
(a) are reserved, (b) (are) in between, (c) make friends quickly.
3. Money cannot bring happiness. (a) yes (true), (b) in between, (c) no (false).
4. Woman is to child as cat is to: (a) kitten, (b) dog, (c) boy.

In the last example there is a right answer—kitten. But there are very few such reasoning items among the questions.

Ask *now* if anything is not clear. The examiner will tell you in a moment to turn the page and start.

When you answer, keep these four points in mind:

1. You are asked not to spend time pondering. Give the first, natural answer as it comes to you. Of course, the questions are too short to give you all the particulars you would sometimes like to have. For instance, the above question asks you about "team games" and you might be fonder of football than basketball. But you are to reply "for the average game," or to strike an average in situations of the kind stated. Give the best answer you can at a rate not slower than five or six a minute. You should finish in a little more than half an hour.
2. Try not to fall back on the middle, "uncertain" answers except when the answer at either end is really impossible for you—perhaps once every two or three questions.
3. Be sure not to skip anything, but answer every question, somehow. Some may not apply to you very well, but give your best guess. Some may seem personal; but remember that the answer sheets are kept confidential and cannot be scored without a special stencil key. Answers to particular questions are not inspected.
4. Answer as honestly as possible what is true of you. Do not merely mark what seems "the right thing to say" to impress the examiner.

DO NOT TURN PAGE UNTIL TOLD TO DO SO

1. I have the instructions for this test clearly in mind. (a) yes, (b) **uncertain**, (c) no.
2. I am ready to answer each question as truthfully as possible. (a) yes, (b) **uncertain**, (c) no.
3. It would be good for everyone if vacations (holidays) were longer and everyone *had* to take them. (a) **agree**, (b) **uncertain**, (c) **disagree**.
4. I can find enough energy to face my difficulties. (a) **always**, (b) **generally**, (c) **seldom**.
5. I feel a bit nervous of wild animals even when they are in strong cages. (a) yes (true), (b) **uncertain**, (c) **no** (false).
6. I hold back from criticizing people and their ideas. (a) yes, (b) **sometimes**, (c) no.
7. I make smart, sarcastic remarks to people if I think they deserve it. (a) **generally**, (b) **sometimes**, (c) **never**.
8. I prefer semiclassical music to popular tunes. (a) **true**, (b) **uncertain**, (c) **false**.
9. If I saw two neighbors' children fighting, I would: (a) **leave them to settle it**, (b) **uncertain**, (c) **reason with them**.
10. On social occasions I: (a) **readily come forward**, (b) **respond in between**, (c) **prefer to stay quietly in the background**.
11. I would rather be: (a) **a construction engineer**, (b) **uncertain**, (c) **a teacher of social studies**.
12. I would rather spend a free evening: (a) **with a good book**, (b) **uncertain**, (c) **working on a hobby with friends**.
13. I can generally put up with conceited people, even though they brag or show they think too well of themselves. (a) **yes**, (b) **in between**, (c) **no**.
14. I'd rather that the person I marry be socially admired than gifted in art or literature. (a) **true**, (b) **uncertain**, (c) **false**.
15. I sometimes get an unreasonable dislike for a person: (a) **but it is so slight I can hide it easily**, (b) **in between**, (c) **which is so definite that I tend to express it**.
16. In a situation which may become dangerous I believe in making a fuss and speaking up even if calmness and politeness are lost. (a) **yes**, (b) **in between**, (c) **no**.
17. I am always keenly aware of attempts at propaganda in things I read. (a) **yes**, (b) **uncertain**, (c) **no**.
18. I wake up in the night and, through worry, have difficulty in sleeping again. (a) **often**, (b) **sometimes**, (c) **never**.
19. I don't feel guilty if scolded for something I did not do. (a) **true**, (b) **uncertain**, (c) **false**.
20. I am considered a liberal "dreamer" of new ways rather than a practical follower of well-tried ways. (a) **true**, (b) **uncertain**, (c) **false**.
21. I find that my interests in people and amusement tend to change fairly rapidly. (a) **yes**, (b) **in between**, (c) **no**.
22. In constructing something I would rather work: (a) **with a committee**, (b) **uncertain**, (c) **on my own**.
23. I find myself counting things, for no particular purpose. (a) **often**, (b) **occasionally**, (c) **never**.
24. When talking I like: (a) **to say things, just as they occur to me**, (b) **in between**, (c) **to get my thoughts well organized first**.
25. I never feel the urge to doodle and fidget when kept sitting still at a meeting. (a) **true**, (b) **uncertain**, (c) **false**.

26. With the same hours and pay, I would prefer the life of: (a) a carpenter or cook, (b) uncertain, (c) a waiter in a good restaurant.
27. With acquaintances I prefer: (a) to keep to matter-of-fact impersonal things, (b) in between, (c) to chat about people and their feelings.
28. "Spade" is to "dig" as "knife" is to: (a) sharp, (b) cut, (c) shovel.
29. I sometimes can't get to sleep because an idea keeps running through my mind. (a) true, (b) uncertain, (c) false.
30. In my personal life I reach the goals I set, almost all the time. (a) true, (b) uncertain, (c) false.
31. When telling a person a deliberate lie I have to look away, being ashamed to look him in the eye. (a) true, (b) uncertain, (c) false.
32. I am uncomfortable when I work on a project requiring quick action affecting others. (a) true, (b) in between, (c) false.
33. Most of the people I know would rate me as an amusing talker. (a) yes, (b) uncertain, (c) no.
34. Many ordinary people would be shocked if they knew my inner personal opinions. (a) yes, (b) uncertain, (c) no.
35. I get slightly embarrassed if I suddenly become the focus of attention in a social group. (a) yes, (b) in between, (c) no.
36. I am always glad to join a large gathering, for example, a party, dance, or public meeting. (a) yes, (b) in between, (c) no.
37. In school I preferred (or prefer): (a) music, (b) uncertain, (c) handwork and crafts.
38. I believe most people are a little "queer" mentally though they do not like to admit it. (a) yes, (b) in between, (c) no.
39. I like a friend (of my sex) who: (a) seriously thinks out his attitudes to life, (b) in between, (c) is efficient and practical in his interests.
40. "If at first you don't succeed, try, try, again," is a motto completely forgotten in the modern world. (a) yes, (b) uncertain, (c) no.
41. I feel a need every now and then to engage in a tough physical activity. (a) yes, (b) in between, (c) no.
42. I would rather mix with polite people than rough, rebellious individuals. (a) yes, (b) in between, (c) no.
43. In intellectual interests, my parents are (were): (a) a bit below average, (b) average, (c) above average.
44. When I am called in by my boss (or teacher), I: (a) see a chance to put in a good word for thing I am concerned about, (b) in between, (c) fear something has gone wrong.
45. I feel a strong need for someone to lean on in times of sadness. (a) yes, (b) in between, (c) no.
46. I occasionally get puzzled when looking in a mirror, as to the meaning of right and left. (a) true, (b) uncertain, (c) false.
47. As a teenager, I joined in school sports: (a) occasionally, (b) fairly often, (c) a great deal.
48. I would rather stop in the street to watch an artist painting than listen to some people having quarrel. (a) true, (b) uncertain, (c) false.
49. I sometimes get in a state of tension and turmoil as I think of the day's happenings. (a) yes, (b) in between, (c) no.
50. I sometimes doubt whether people I am talking to are really interested in what I am saying. (a) yes, (b) in between, (c) no.

51. I would like to be: (a) a forester, (b) uncertain, (c) a grammar or high school teacher.
52. For special holidays and birthdays, I: (a) like to give personal presents, (b) uncertain, (c) feel that buying presents is a bit of a nuisance.
53. "Tired" is to "work" as "proud" is to: (a) rest, (b) success, (c) exercise.
54. Which of the following items is different in kind from the others? (a) candle, (b) moon, (c) electric light.
55. I admire my parents in all important matters. (a) yes, (b) uncertain, (c) no.
56. I have some characteristics in which I feel definitely superior to most people. (a) yes, (b) uncertain, (c) no.
57. If it is useful to others, I don't mind taking a dirty job that others look down on. (a) true, (b) uncertain, (c) false.
58. I like to go out to a show or entertainment: (a) more than once a week (more than average), (b) about once a week (average), (c) less than once a week (less than average).
59. I think that plenty of freedom is more important than good manners and respect for the law. (a) true, (b) uncertain, (c) false.
60. I tend to keep quiet in the presence of senior persons (people of greater experience, age, or rank). (a) yes, (b) in between, (c) no.
61. I find it hard to address or recite to a large group. (a) yes, (b) in between, (c) no.
62. I would rather live in a town: (a) which is rough, prosperous, and booming, (b) uncertain, (c) artistically laid out, but relatively poor.
63. If I make an awkward social mistake, I can soon forget it. (a) yes, (b) in between, (c) no.
64. When I read an unfair magazine article, I am more inclined to forget it than to feel like "hitting back." (a) true, (b) uncertain, (c) false.
65. My memory tends to drop a lot of unimportant trivial things, for example, names of streets or stores in town. (a) yes, (b) in between, (c) no.
66. I am considered a person easily swayed by appeals to my feelings. (a) yes, (b) in between, (c) no.
67. I eat my food with gusto, not always so carefully and properly as some people. (a) true, (b) uncertain, (c) false.
68. I generally keep up hope in ordinary difficulties. (a) yes, (b) uncertain, (c) no.
69. People sometimes warn me that I show my excitement in voice and manner too obviously. (a) yes, (b) in between, (c) no.
70. As a teenager, if I differed in opinion from my parents, I usually: (a) kept my own opinion, (b) in between, (c) accepted their authority.
71. I prefer to marry someone who can: (a) keep the family interested in its own activities, (b) in between, (c) make the family a part of the social life of the neighborhood.
72. I would rather enjoy life quietly in my own way than be admired for my achievements. (a) true, (b) uncertain, (c) false.
73. I can work carefully on most things without being bothered by people making a lot of noise around me. (a) yes, (b) in between, (c) no.
74. I feel that on one or two occasions recently I have been blamed more than I really deserve. (a) yes, (b) in between, (c) no.
75. I am always able to keep the expressions of my feelings under exact control. (a) yes, (b) in between, (c) no.

76. In starting a useful invention, I would prefer: (a) **working on it in the laboratory**, (b) **uncertain**, (c) **selling it to people**.
77. "Surprise" is to "strange" as "fear" is to: (a) **brave**, (b) **anxious**, (c) **terrible**.
78. Which of the following fractions is not in the same class as the others? (a) $\frac{3}{7}$, (b) $\frac{3}{9}$, (c) $\frac{3}{11}$.
79. Some people seem to ignore or avoid me, although I don't know why. (a) **true**, (b) **uncertain**, (c) **false**.
80. People treat me less reasonably than my good intentions deserve. (a) **often**, (b) **occasionally**, (c) **never**.
81. The use of foul language, even when it is not in a mixed group of men and women, still disgusts me. (a) **yes**, (b) **in between**, (c) **no**.
82. I have decidedly fewer friends than most people. (a) **yes**, (b) **in between**, (c) **no**.
83. I would hate to be where there wouldn't be a lot of people to talk to. (a) **true**, (b) **uncertain**, (c) **false**.
84. People sometimes call me careless, even though they think me an attractive person. (a) **yes**, (b) **in between**, (c) **no**.
85. My reserve always stands in the way when I want to speak to an attractive stranger of the opposite sex. (a) **yes**, (b) **in between**, (c) **no**.
86. I would rather have a job with: (a) **a fixed, certain salary**, (b) **in between**, (c) **a larger salary, but depending on my constantly persuading people I am worth it**.
87. I prefer reading: (a) **a realistic account of military or political battles**, (b) **uncertain**, (c) **a sensitive, imaginative novel**.
88. When bossy people try to "push me around," I do just the opposite of what they wish. (a) **yes**, (b) **in between**, (c) **no**.
89. Most people would be "better off" if given more praise instead of more criticism. (a) **true**, (b) **uncertain**, (c) **false**.
90. In discussing art, religion, or politics, I seldom get so involved or excited I forget politeness and human relations. (a) **true**, (b) **uncertain**, (c) **false**.
91. If someone got mad at me, I would: (a) **try to calm him down**, (b) **uncertain**, (c) **get irritated**.
92. I would like to see a move toward: (a) **eating more vegetable foods, to avoid killing so many animals**, (b) **uncertain**, (c) **getting better poisons to kill the animals which ruin farmers' crops (such as squirrels, rabbits, and some kinds of birds)**.
93. If acquaintances treat me badly and show they dislike me: (a) **it does not upset me a bit**, (b) **in between**, (c) **I tend to get downhearted**.
94. Careless folks who say "the best things in life are free" usually haven't worked to get much. (a) **true**, (b) **in between**, (c) **false**.
95. Because it is not always possible to get things done by gradual, reasonable methods, it is sometimes necessary to use force. (a) **true**, (b) **in between**, (c) **false**.
96. At fifteen or sixteen I went about with the opposite sex: (a) **a lot**, (b) **as much as most people**, (c) **less than most people**.
97. I like to take an active part in social affairs, committee work, etc. (a) **yes**, (b) **in between**, (c) **no**.
98. The idea that sickness comes as much from mental as physical causes is much exaggerated. (a) **yes**, (b) **in between**, (c) **no**.
99. Quite small setbacks occasionally irritate me too much. (a) **yes**, (b) **in between**, (c) **no**.
100. I very rarely blurt out annoying remarks that hurt people's feelings. (a) **true**, (b) **uncertain**, (c) **false**.

101. I would prefer to work in a business: (a) talking to customers, (b) in between, (c) keeping office accounts and records.
102. "Size" is to "length" as "dishonest" is to: (a) prison, (b) sin, (c) stealing.
103. AB is to dc as SR is to: (a) qp, (b) pq, (c) tu.
104. When people are unreasonable, I just: (a) keep quiet, (b) in between, (c) despise them.
105. If people talk loudly while I am listening to music, I: (a) can keep my mind on the music and not be bothered, (b) in between, (c) find it spoils my enjoyment and annoys me.
106. I think I am better described as: (a) polite and quiet, (b) in between, (c) forceful.
107. I attend social functions only when I have to, and stay away any other time. (a) yes, (b) uncertain, (c) no.
108. To be cautious and expect little is better than to be happy at heart, always expecting success. (a) true, (b) uncertain, (c) false.
109. In thinking of difficulties in my work, I: (a) try to plan ahead, before I meet them, (b) in between, (c) assume I can handle them when they come.
110. I have at least as many friends of the opposite sex as of my own. (a) yes, (b) in between, (c) no.
111. Even in an important game I am more concerned to enjoy it than to win. (a) always, (b) generally, (c) occasionally.
112. I would rather be: (a) a guidance worker with young people seeking careers, (b) uncertain, (c) a manager in a technical manufacturing concern.
113. If I am quite sure that a person is unjust or behaving selfishly, I show him up, even if it takes some trouble. (a) yes, (b) in between, (c) no.
114. Some people criticize my sense of responsibility. (a) yes, (b) uncertain, (c) no.
115. I would enjoy being a newspaper writer on drama, concerts, opera, etc. (a) yes, (b) uncertain, (c) no.
116. I find it embarrassing to have praise or compliments bestowed on me. (a) yes, (b) in between, (c) no.
117. I think it is more important in the modern world to solve: (a) the political difficulties, (b) uncertain, (c) the question of moral purpose.
118. I occasionally have a sense of vague danger or sudden dread for no sufficient reason. (a) yes, (b) in between, (c) no.
119. As a child I feared the dark. (a) often, (b) sometimes, (c) never.
120. On a free evening I like to: (a) see an historical film about past adventures, (b) uncertain, (c) read science fiction or an essay on "The Future of Science."
121. It bothers me if people think I am being too unconventional or odd. (a) a lot, (b) somewhat, (c) not at all.
122. Most people would be happier if they lived more with their fellows and did the same things as others. (a) yes, (b) in between, (c) no.
123. I like to go my own way instead of acting on approved rules. (a) true, (b) uncertain, (c) false.
124. Often I get angry with people too quickly. (a) yes, (b) in between, (c) no.
125. When something really upsets me, I generally calm down again quite quickly. (a) yes, (b) in between, (c) no.

126. If the earnings were the same, I would rather be: (a) a lawyer, (b) uncertain, (c) a navigator or pilot.
127. "Better" is to "worse^t" as "slower" is to: (a) fast, (b) best, (c) quickest.
128. Which of the following should come next at the end of this row of letters: xooooxxooxxx?
(a) xox, (b) oox, (c) oxx.
129. When the time comes for something I have planned and looked forward to, I occasionally do not feel up to going. (a) true, (b) in between, (c) false.
130. I could enjoy the life of an animal doctor, handling disease and surgery of animals. (a) yes, (b) in between, (c) no.
131. I occasionally tell strangers things that seem to me important, regardless of whether they ask about them. (a) yes, (b) in between, (c) no.
132. I spend much of my spare time talking with friends over social events enjoyed in the past.
(a) yes, (b) in between, (c) no.
133. I enjoy doing "daring," foolhardy things "just for fun." (a) yes, (b) in between, (c) no.
134. I think the police can be trusted not to ill-treat innocent people. (a) yes, (b) in between, (c) no.
135. I consider myself a very sociable, outgoing person. (a) yes, (b) in between, (c) no.
136. In social contacts I: (a) show my emotions as I wish, (b) in between, (c) keep my emotions to myself.
137. I enjoy music that is: (a) light, dry, and brisk, (b) in between, (c) emotional and sentimental.
138. I try to make my laughter at jokes quieter than most people's. (a) yes, (b) in between, (c) no.
139. I admire the beauty of a fairy tale more than that of a well-made gun. (a) yes, (b) uncertain, (c) no.
140. Hearing different beliefs about right and wrong is: (a) always interesting, (b) something we cannot avoid, (c) bad for most people.
141. I am always interested in mechanical matters, for example, in cars and airplanes. (a) yes, (b) in between, (c) no.
142. I like to tackle problems that other people have made a mess of. (a) yes, (b) in between, (c) no.
143. I am properly regarded as only a plodding, half-successful person. (a) yes, (b) uncertain, (c) no.
144. If people take advantage of my friendliness, I do not resent it and I soon forget. (a) true, (b) uncertain, (c) false.
145. I think the spread of birth control is essential to solving the world's economic and peace problems.
(a) yes, (b) uncertain, (c) no.
146. I like to do my planning alone, without interruptions and suggestions from others. (a) yes, (b) in between, (c) no.
147. I sometimes let my actions get swayed by feelings of jealousy. (a) yes, (b) in between, (c) no.
148. I believe firmly "the boss may not always be right, but he always has the right to be boss." (a) yes, (b) uncertain, (c) no.
149. I tend to tremble or perspire when I think of a difficult task ahead. (a) generally, (b) occasionally, (c) never.
150. If people shout suggestions when I'm playing a game, it does not upset me. (a) true, (b) uncertain, (c) false.

151. I would prefer the life of: (a) an artist, (b) uncertain, (c) a secretary running a social club.
152. Which of the following words does not properly belong with the others? (a) any, (b) some, (c) most.
153. "Flame" is to "heat" as "rose" is to: (a) thorn, (b) red petals, (c) scent.
154. I have vivid dreams, disturbing my sleep. (a) often, (b) occasionally, (c) practically never.
155. If the odds are really against something's being a success, I still believe in taking the risk. (a) yes, (b) in between, (c) no.
156. I like it when I know so well what the group has to do that I naturally become the one in command. (a) yes, (b) in between, (c) no.
157. I would rather dress with quiet correctness than with eye-catching personal style. (a) true, (b) uncertain, (c) false.
158. An evening with a quiet hobby appeals to me more than a lively party. (a) true, (b) uncertain, (c) false.
159. I close my mind to well-meant suggestions of others, even though I know I shouldn't. (a) occasionally, (b) hardly ever, (c) never.
160. I always make a point, in deciding anything, to refer to basic rules of right and wrong. (a) yes, (b) in between, (c) no.
161. I somewhat dislike having a group watch me at work. (a) yes, (b) in between, (c) no.
162. I keep my room smartly organized, with things in known places almost all the time. (a) yes, (b) in between, (c) no.
163. In school I preferred: (a) English, (b) uncertain, (c) mathematics or arithmetic.
164. I have sometimes been troubled by people's saying bad things about me behind my back, with no grounds at all. (a) yes, (b) uncertain, (c) no.
165. Talk with ordinary, habit-bound, conventional people: (a) is often quite interesting and has a lot to it, (b) in between, (c) annoys me because it deals with trifles and lacks depth.
166. I like to: (a) have a circle of warm friendships, even if they are demanding, (b) in between, (c) be free of personal entanglements.
167. I think it is wiser to keep the nation's military forces strong than just to depend on international goodwill. (a) yes, (b) in between, (c) no.
168. People regard me as a solid, undisturbed person, unmoved by ups and downs in circumstances. (a) yes, (b) in between, (c) no.
169. I think society should let reason lead it to new customs and throw aside old habits or mere traditions. (a) yes, (b) in between, (c) no.
170. My viewpoints change in an uncertain way because I trust my feelings more than logical reasoning. (a) true, (b) to some extent, (c) false.
171. I learn better by: (a) reading a well-written book, (b) in between, (c) joining a group discussion.
172. I have periods when it's hard to stop a mood of self-pity. (a) often, (b) occasionally, (c) never.
173. I like to wait till I am sure that what I am saying is correct, before I put forth an argument. (a) always, (b) generally, (c) only if it's practicable.
174. Small things sometimes "get on my nerves" unbearably though I realize them to be trivial. (a) yes, (b) in between, (c) no.
175. I don't often say things on the spur of the moment that I greatly regret. (a) true, (b) uncertain, (c) false.

51. I would prefer the life of: (a) **an artist**, (b) **uncertain**, (c) **a secretary running a social club**.
52. Which of the following words does not properly belong with the others? (a) **any**, (b) **some**, (c) **most**.
53. "Flame" is to "heat" as "rose" is to: (a) **thorn**, (b) **red petals**, (c) **scent**.
54. I have vivid dreams, disturbing my sleep. (a) **often**, (b) **occasionally**, (c) **practically never**.
55. If the odds are really against something's being a success, I still believe in taking the risk. (a) **yes**, (b) **in between**, (c) **no**.
56. I like it when I know so well what the group has to do that I naturally become the one in command. (a) **yes**, (b) **in between**, (c) **no**.
57. I would rather dress with quiet correctness than with eye-catching personal style. (a) **true**, (b) **uncertain**, (c) **false**.
58. An evening with a quiet hobby appeals to me more than a lively party. (a) **true**, (b) **uncertain**, (c) **false**.
59. I close my mind to well-meant suggestions of others, even though I know I shouldn't. (a) **occasionally**, (b) **hardly ever**, (c) **never**.
60. I always make a point, in deciding anything, to refer to basic rules of right and wrong. (a) **yes**, (b) **in between**, (c) **no**.
61. I somewhat dislike having a group watch me at work. (a) **yes**, (b) **in between**, (c) **no**.
62. I keep my room smartly organized, with things in known places almost all the time. (a) **yes**, (b) **in between**, (c) **no**.
63. In school I preferred: (a) **English**, (b) **uncertain**, (c) **mathematics or arithmetic**.
64. I have sometimes been troubled by people's saying bad things about me behind my back, with no grounds at all. (a) **yes**, (b) **uncertain**, (c) **no**.
65. Talk with ordinary, habit-bound, conventional people: (a) **is often quite interesting and has a lot to it**, (b) **in between**, (c) **annoys me because it deals with trifles and lacks depth**.
66. I like to: (a) **have a circle of warm friendships, even if they are demanding**, (b) **in between**, (c) **be free of personal entanglements**.
67. I think it is wiser to keep the nation's military forces strong than just to depend on international goodwill. (a) **yes**, (b) **in between**, (c) **no**.
68. People regard me as a solid, undisturbed person, unmoved by ups and downs in circumstances. (a) **yes**, (b) **in between**, (c) **no**.
69. I think society should let reason lead it to new customs and throw aside old habits or mere traditions. (a) **yes**, (b) **in between**, (c) **no**.
70. My viewpoints change in an uncertain way because I trust my feelings more than logical reasoning. (a) **true**, (b) **to some extent**, (c) **false**.
71. I learn better by: (a) **reading a well-written book**, (b) **in between**, (c) **joining a group discussion**.
72. I have periods when it's hard to stop a mood of self-pity. (a) **often**, (b) **occasionally**, (c) **never**.
73. I like to wait till I am sure that what I am saying is correct, before I put forth an argument. (a) **always**, (b) **generally**, (c) **only if it's practicable**.
74. Small things sometimes "get on my nerves" unbearably though I realize them to be trivial. (a) **yes**, (b) **in between**, (c) **no**.
75. I don't often say things on the spur of the moment that I greatly regret. (a) **true**, (b) **uncertain**, (c) **false**.

151. I would prefer the life of: (a) **an artist**, (b) **uncertain**, (c) **a secretary running a social club**.
152. Which of the following words does not properly belong with the others? (a) **any**, (b) **some**, (c) **most**.
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157. I would rather dress with quiet correctness than with eye-catching personal style. (a) **true**, (b) **uncertain**, (c) **false**.
158. An evening with a quiet hobby appeals to me more than a lively party. (a) **true**, (b) **uncertain**, (c) **false**.
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160. I always make a point, in deciding anything, to refer to basic rules of right and wrong. (a) **yes**, (b) **in between**, (c) **no**.
161. I somewhat dislike having a group watch me at work. (a) **yes**, (b) **in between**, (c) **no**.
162. I keep my room smartly organized, with things in known places almost all the time. (a) **yes**, (b) **in between**, (c) **no**.
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164. I have sometimes been troubled by people's saying bad things about me behind my back, with no grounds at all. (a) **yes**, (b) **uncertain**, (c) **no**.
165. Talk with ordinary, habit-bound, conventional people: (a) **is often quite interesting and has a lot to it**, (b) **in between**, (c) **annoys me because it deals with trifles and lacks depth**.
166. I like to: (a) **have a circle of warm friendships, even if they are demanding**, (b) **in between**, (c) **be free of personal entanglements**.
167. I think it is wiser to keep the nation's military forces strong than just to depend on international goodwill. (a) **yes**, (b) **in between**, (c) **no**.
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169. I think society should let reason lead it to new customs and throw aside old habits or mere traditions. (a) **yes**, (b) **in between**, (c) **no**.
170. My viewpoints change in an uncertain way because I trust my feelings more than logical reasoning. (a) **true**, (b) **to some extent**, (c) **false**.
171. I learn better by: (a) **reading a well-written book**, (b) **in between**, (c) **joining a group discussion**.
172. I have periods when it's hard to stop a mood of self-pity. (a) **often**, (b) **occasionally**, (c) **never**.
173. I like to wait till I am sure that what I am saying is correct, before I put forth an argument. (a) **always**, (b) **generally**, (c) **only if it's practicable**.
174. Small things sometimes "get on my nerves" unbearably though I realize them to be trivial. (a) **yes**, (b) **in between**, (c) **no**.
175. I don't often say things on the spur of the moment that I greatly regret. (a) **true**, (b) **uncertain**, (c) **false**.

176. If asked to work with a charity drive, I would: (a) **accept**, (b) **uncertain**, (c) **politely say I'm too busy**.
177. Which of the following words does not belong with the others? (a) **wide**, (b) **zigzag**, (c) **regular**.
178. "Soon" is to "never" as "near" is to: (a) **nowhere**, (b) **far**, (c) **next**.
179. I have a good sense of direction (find it easy to tell which is North, South, East, or West) when in a strange place. (a) **yes**, (b) **in between**, (c) **no**.
180. I am known as an "idea man" who almost always puts forward some ideas on a problem. (a) **yes**, (b) **in between**, (c) **no**.
181. I think I am better at showing: (a) **nerve in meeting challenges**, (b) **uncertain**, (c) **tolerance of other people's wishes**.
182. I am considered a very enthusiastic person. (a) **yes**, (b) **in between**, (c) **no**.
183. I like a job that offers change, variety, and travel, even if it involves some danger. (a) **yes**, (b) **in between**, (c) **no**.
184. I am a fairly strict person, insisting on always doing things as correctly as possible. (a) **true**, (b) **in between**, (c) **false**.
185. I enjoy work that requires conscientious, exacting skills. (a) **yes**, (b) **in between**, (c) **no**.
186. I'm the energetic type who keeps busy. (a) **yes**, (b) **uncertain**, (c) **no**.
187. I am sure there are no questions that I have skipped or failed to answer properly. (a) **yes**, (b) **uncertain**, (c) **no**.

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(Nearest Year)

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EYSENCK PERSONALITY INVENTORY

by H. J. Eysenck and Sybil B. G. Eysenck

PERSONALITY QUESTIONNAIRE

FORM A

NAME..... AGE.....

OCCUPATION..... SEX.....

N=

☐

E=

☐

L=

☐*Instructions*

Here are some questions regarding the way you behave, feel and act. After each question is a space for answering "YES" or "NO".

Try to decide whether "YES" or "NO" represents your usual way of acting or feeling. Then put a cross in the circle under the column headed "YES" or "NO". Work quickly, and don't spend too much time over any question; we want your first reaction, not a long-drawn out thought process. The whole questionnaire shouldn't take more than a few minutes. Be sure not to omit any questions.

Now turn the page over and go ahead. Work quickly, and remember to answer every question. There are no right or wrong answers, and this isn't a test of intelligence or ability, but simply a measure of the way you behave.



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Warwick Square, London E.C.4

E



N



L



--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

FORM A

YES NO

- | | | |
|---|-----------------------|-----------------------|
| 1. Do you often long for excitement? | <input type="radio"/> | <input type="radio"/> |
| 2. Do you often need understanding friends to cheer you up? | <input type="radio"/> | <input type="radio"/> |
| 3. Are you usually carefree? | <input type="radio"/> | <input type="radio"/> |
| 4. Do you find it very hard to take no for an answer? | <input type="radio"/> | <input type="radio"/> |
| 5. Do you stop and think things over before doing anything? | <input type="radio"/> | <input type="radio"/> |
| 6. If you say you will do something do you always keep your promise, no matter how inconvenient it might be to do so? | <input type="radio"/> | <input type="radio"/> |
| 7. Does your mood often go up and down? | <input type="radio"/> | <input type="radio"/> |
| 8. Do you generally do and say things quickly without stopping to think? | <input type="radio"/> | <input type="radio"/> |
| 9. Do you ever feel "just miserable" for no good reason? | <input type="radio"/> | <input type="radio"/> |
| 10. Would you do almost anything for a dare? | <input type="radio"/> | <input type="radio"/> |
| 11. Do you suddenly feel shy when you want to talk to an attractive stranger? | <input type="radio"/> | <input type="radio"/> |
| 12. Once in a while do you lose your temper and get angry? | <input type="radio"/> | <input type="radio"/> |
| 13. Do you often do things on the spur of the moment? | <input type="radio"/> | <input type="radio"/> |
| 14. Do you often worry about things you should not have done or said? | <input type="radio"/> | <input type="radio"/> |
| 15. Generally, do you prefer reading to meeting people? | <input type="radio"/> | <input type="radio"/> |
| 16. Are your feelings rather easily hurt? | <input type="radio"/> | <input type="radio"/> |
| 17. Do you like going out a lot? | <input type="radio"/> | <input type="radio"/> |
| 18. Do you occasionally have thoughts and ideas that you would not like other people to know about? | <input type="radio"/> | <input type="radio"/> |
| 19. Are you sometimes bubbling over with energy and sometimes very sluggish? | <input type="radio"/> | <input type="radio"/> |
| 20. Do you prefer to have few but special friends? | <input type="radio"/> | <input type="radio"/> |
| 21. Do you daydream a lot? | <input type="radio"/> | <input type="radio"/> |
| 22. When people shout at you, do you shout back? | <input type="radio"/> | <input type="radio"/> |
| 23. Are you often troubled about feelings of guilt? | <input type="radio"/> | <input type="radio"/> |
| 24. Are all your habits good and desirable ones? | <input type="radio"/> | <input type="radio"/> |
| 25. Can you usually let yourself go and enjoy yourself a lot at a gay party? | <input type="radio"/> | <input type="radio"/> |
| 26. Would you call yourself tense or "highly-strung"? | <input type="radio"/> | <input type="radio"/> |
| 27. Do other people think of you as being very lively? | <input type="radio"/> | <input type="radio"/> |

	YES	NO
28. After you have done something important, do you often come away feeling you could have done better?	<input type="radio"/>	<input type="radio"/>
29. Are you mostly quiet when you are with other people?	<input type="radio"/>	<input type="radio"/>
30. Do you sometimes gossip?	<input type="radio"/>	<input type="radio"/>
31. Do ideas run through your head so that you cannot sleep?	<input type="radio"/>	<input type="radio"/>
32. If there is something you want to know about, would you rather look it up in a book than talk to someone about it?	<input type="radio"/>	<input type="radio"/>
33. Do you get palpitations or thumping in your heart?	<input type="radio"/>	<input type="radio"/>
34. Do you like the kind of work that you need to pay close attention to?	<input type="radio"/>	<input type="radio"/>
35. Do you get attacks of shaking or trembling?	<input type="radio"/>	<input type="radio"/>
36. Would you always declare <i>everything</i> at the customs, even if you knew that you could never be found out?	<input type="radio"/>	<input type="radio"/>
37. Do you hate being with a crowd who play jokes on one another?	<input type="radio"/>	<input type="radio"/>
38. Are you an irritable person?	<input type="radio"/>	<input type="radio"/>
39. Do you like doing things in which you have to act quickly?	<input type="radio"/>	<input type="radio"/>
40. Do you worry about awful things that might happen?	<input type="radio"/>	<input type="radio"/>
41. Are you slow and unhurried in the way you move?	<input type="radio"/>	<input type="radio"/>
42. Have you ever been late for an appointment or work?	<input type="radio"/>	<input type="radio"/>
43. Do you have many nightmares?	<input type="radio"/>	<input type="radio"/>
44. Do you like talking to people so much that you never miss a chance of talking to a stranger?	<input type="radio"/>	<input type="radio"/>
45. Are you troubled by aches and pains?	<input type="radio"/>	<input type="radio"/>
46. Would you be very unhappy if you could not see lots of people most of the time?	<input type="radio"/>	<input type="radio"/>
47. Would you call yourself a nervous person?	<input type="radio"/>	<input type="radio"/>
48. Of all the people you know, are there some whom you definitely do not like?	<input type="radio"/>	<input type="radio"/>
49. Would you say that you were fairly self-confident?	<input type="radio"/>	<input type="radio"/>
50. Are you easily hurt when people find fault with you or your work?	<input type="radio"/>	<input type="radio"/>
51. Do you find it hard to really enjoy yourself at a lively party?	<input type="radio"/>	<input type="radio"/>
52. Are you troubled with feelings of inferiority?	<input type="radio"/>	<input type="radio"/>
53. Can you easily get some life into a rather dull party?	<input type="radio"/>	<input type="radio"/>
54. Do you sometimes talk about things you know nothing about?	<input type="radio"/>	<input type="radio"/>
55. Do you worry about your health?	<input type="radio"/>	<input type="radio"/>
56. Do you like playing pranks on others?	<input type="radio"/>	<input type="radio"/>
57. Do you suffer from sleeplessness?	<input type="radio"/>	<input type="radio"/>

PLEASE CHECK TO SEE THAT YOU HAVE ANSWERED ALL THE QUESTIONS

APPENDIX D

SURNAME..... INITIALS.....

E.M. SCALE.

CODE No.

YEAR 1.

M. or F.

CHRISTMAS TERM 1963.

Here you have a list of things in which are INTERESTED. Mark with an X anything which interests you and by XX if it interests you very much.

roller skating.	debating.	listening to jazz.
climbing trees.	collecting stamps or coins.	farming.
Playing records.	rabbit breeding	reading poetry
gardening.	dancing	collecting Dinkeys.
serious music.	going to the cinema	autograph hunting.
walking about alone.	birds nesting.	nature study.
playing conkers.	going to concerts.	ballroom dancing.
climbing trees.	joining social clubs.	tennis.
wearing new clothes.	picnicking.	nursing the sick.
making things.	playing marbles.	singing in a group
helping about the house.	writing to people.	climbing mountains.
painting pictures.	scouting or guiding	square or country dancing
clay modelling	bird watching.	team games.
horse riding.	acrobatics.	

Now you have a list of things you could ADMIRE in people. If they do so mark by an X and by XX if you admire them very much.

liveliness.	obedience.	tidy hair.
tact.	ability to dress well.	understanding.
tidiness.	kindness.	polished shoes.
having good teeth	those who take risks.	a sense of humour.
good behaviour.	logical thinking.	clear eyes.
ability to joke.	plenty of knowledge.	wittiness.
unselfishness.	having a pretty face.	devotion to job.
having a sense of duty.	adaptability.	charm.
kindness to animals.	optimism.	determination.

Here you have some things people WORRY about. Mark by an X any which worry you and by an XX if they do so very much.

self-consciousness.	poison	blushing.
road accidents.	cheekiness.	boasting.
examinations.	future career.	my hair.
punishment.	hypocrites.	my looks.
criminals.	bad habits.	being doubted.
homework.	my friends.	floods.
nailbiting.	germs.	disfigurement.
burglars.	leaving school.	awkwardness.
talking behind one's back.	lack of water.	being late for school.
bad dreams.	failure.	telling lies.
strict teachers.	my clothes.	my weight.
familiarity.	death.	school reports.
forwardness.	mother.	people finding fault with me.

roughness.	treatment of coloured people.	
dirty faces.	school work.	talking to people.
popularity.	nightmares.	

Here you have a list of things you might like to do WHEN YOU GROW UP. Mark by an X anything you would like to do and by XX to do so very much.

be a detective.	a musician.	win the V.C.
be a lecturer.	a traveller.	an ice skater.
keep pets.	be a swimming champion.	teach others.
a footballer.	a comedian.	get married.
be a sea captain.	an actor or actress.	write books.
a librarian.	tightrope walker.	own a riding school.
be a policeman.	a poet.	be a model.

Now you have a list of things which could make you ANGRY. Mark by an X any which do and by XX if they do so very much.

being copied.	nicknames.	showing-off.
two-faced people.	injustice.	homework.
teasing.	stubbornness.	boasting.
naughty children.	being in the wrong.	being made fun of.
favouritism.	being fooled.	people who pick fights.
reckless drivers.	losing something.	looking down on coloured people.
spoilt children.	being told off.	
cheekiness.	rude shop girls.	bullies.
coarse behaviour.	calling jazz a row.	disobedience.

Here are some things which people are AFRAID OF. Mark by an X anything which you fear and XX if you are very afraid.

being run over by a train.	earthquakes.	water.
growing up.	slugs.	death.
our house on fire.	murderers.	broken bones.
H-bomb.	heights.	examinations.
Teddy Boys.	daddy-long-legs.	the devil
old men.	wild animals.	crawling things.
strangers.	explosions.	crossing a busy road.
chimney on fire.		

This is a list of things you might LIKE TO WISH FOR. If there is anything mark by an X and XX if you wish for something very much.

to discover buried treasure.	to be prosperous.	to be a hero.
academic success.	make everyone rich.	advance science.
electric train.	feed the poor.	to be independent.
to be a champion swimmer.	meet a famous person.	to win a football pool.
to tame wild animals.	travel the world.	to have plenty of new clothes.
meet the Queen	for a sweet shop.	
to perform miracles.	for a good figure.	to be admired.
to be a good climber.	find a cure for cancer.	for a box of toffees.
happiness for all.	turn lead into gold.	to be attractive to the opposite sex.
plenty of ice-cream.	for a monkey.	
to comfort old people.	for a speed boat.	to be able to read people's minds.
to live forever.		

Here is a list of things you could DISLIKE. Mark by an X any of the things you don't like and XX if you really dislike them.

cheekiness.	dirty faces.	criminals.
hypocrites.	swollen headed people.	broken windows.
slang.	fighting.	cattiness.
dyed hair.	roughness.	poor spelling.
deceitfulness.	painted fingernails.	cowardice.
Sunday cinemas.	queue jumpers.	broken toys.
untidy rooms.	banging doors.	bad temper.
familiarity.	forwardness.	being doubted.
hitting for nothing.	boasting.	lipstick.
talking behind one's back.	creaking shoes.	feet on chairs.

Here is a list of things you might LIKE TO DO IN YOUR SPARE TIME. If there are any then mark by an X and if very keen by an XX.

to read comics.	explore caves.	just gossip.
go for long walks.	play in ruins.	visit museums.
jazz concerts.	eat ice-cream.	go out with parents.
play on a beach.	meet people.	go to fun fairs.
forget work.	visit new places.	collect shells.
play football.	help at home	play with marbles.
play chasing.	spend money.	go to plays.
eat lollipops.	sit alone.	eat sweets.
sail boats.	play hide and seek.	make new friends.

Now you have a list of things thought to be WRONG. Mark by an X any of the things you consider to be wrong and by an XX if you think they are very wrong.

shabbiness.	nailbiting.	neglecting children.
swearing.	fox hunting.	over-eating.
untidying.	losing things.	day-dreaming.
strikes.	dirty shoes.	thumb sucking.
making others miserable.	making silly faces.	narrow mindedness.
spreading colds.	clumsiness.	touching things.
no self-control.	yielding to temptation.	spoiling games.
using slang.	wearing hats in the cinema.	
spreading untruths.	being inconsiderate.	leaving things undone.
people doing things they shouldn't	not being allowed to go out alone.	

If you had the money this is a list of things you MIGHT LIKE TO BUY. If there is anything then mark by X and if very much then by XX

novelties.	toys.	jazz records.
plenty of clothes.	a present for teacher.	roller skates.
things for school.	comics.	sweets.
things for parents.	a motor bike.	Dinkey cars.
a dictionary	a radio-controlled boat	a bird cage.

This is a list of things which could MAKE YOU HAPPY. Mark by an X anything which does and XX if it makes you very happy.

pleasing someone.	hearing music.	a fine spring day.
new clothes.	going to parties.	having birthdays.
being with animals.	Xmas morning.	going to Church.
playing for a team.	a good deed.	an expected outing.
a new friend.	to see parents happy.	just playing.
Saturdays,	listening to jazz.	dreaming.
being admired.	going to weddings.	good company.
doing something I like.	eating lollipops.	watching trains
being praised.	co-operation between nations.	buying things for other

This is a list of DAYDREAMS. If there is anything you daydream about then mark by X and XX if you dream about it very much.

driving a train.	eating sweets.	being on the stage.
life in general	the opposite sex.	just playing.
my birthday.	catching criminals.	my pet.
visiting foreign places.	rescuing people.	building castles in the air.
inventing something.	fighting.	
marriage.	being a film star.	being able to fly.

Lastly, here you have a list of things you might like to READ ABOUT. If there is anything then mark by X and if you are very keen then by XX.

bible stories.	love.	treasure hunting.
cartoons.	travel.	autobiography.
romance.	Scotland Yard.	circus stories.
comics.	jungle stories.	classical stories.
character studies.	gangsters.	Wild West and Cowboys.
criminals.	farms.	ghosts.
fairy stories.		

DO NOT OPEN UNTIL TOLD TO DO SO

MINNESOTA TEACHER ATTITUDE INVENTORY

Form A

WALTER W. COOK
University of Minnesota

CARROLL H. LEEDS
Furman University

ROBERT CALLIS
University of Missouri

DIRECTIONS

This inventory consists of 150 statements designed to sample opinions about teacher-pupil relations. There is considerable disagreement as to what these relations should be; therefore, there are no right or wrong answers. What is wanted is your own individual feeling about the statements. Read each statement and decide how YOU feel about it. Then mark your answer on the space provided on the answer sheet. Do not make any marks on this booklet.

- If you strongly agree, blacken space under "SA"
- If you agree, blacken space under "A"
- If you are undecided or uncertain, blacken space under "U"
- If you disagree, blacken space under "D"
- If you strongly disagree, blacken space under "SD"

SA	A	U	D	SD
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SA	A	U	D	SD
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SA	A	U	D	SD
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SA	A	U	D	SD
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SA	A	U	D	SD
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Think in terms of the general situation rather than specific ones. There is no time limit, but work as rapidly as you can. PLEASE RESPOND TO EVERY ITEM.

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The Psychological Corporation
304 East 45th Street
New York 17, N. Y.

SA—Strongly agree
A—Agree

U—Undecided
or uncertain

D—Disagree
SD—Strongly disagree

1. Most children are obedient.
2. Pupils who "act smart" probably have too high an opinion of themselves.
3. Minor disciplinary situations should sometimes be turned into jokes.
4. Shyness is preferable to boldness.
5. Teaching never gets monotonous.
6. Most pupils don't appreciate what a teacher does for them.
7. If the teacher laughs with the pupils in amusing classroom situations, the class tends to get out of control.
8. A child's companionships can be too carefully supervised.
9. A child should be encouraged to keep his likes and dislikes to himself.
10. It sometimes does a child good to be criticized in the presence of other pupils.
11. Unquestioning obedience in a child is not desirable.
12. Pupils should be required to do more studying at home.
13. The first lesson a child needs to learn is to obey the teacher without hesitation.
14. Young people are difficult to understand these days.
15. There is too great an emphasis upon "keeping order" in the classroom.
16. A pupil's failure is seldom the fault of the teacher.
17. There are times when a teacher cannot be blamed for losing patience with a pupil.
18. A teacher should never discuss sex problems with the pupils.
19. Pupils have it too easy in the modern school.
20. A teacher should not be expected to burden himself with a pupil's problems.
21. Pupils expect too much help from the teacher in getting their lessons.
22. A teacher should not be expected to sacrifice an evening of recreation in order to visit a child's home.
23. Most pupils do not make an adequate effort to prepare their lessons.
24. Too many children nowadays are allowed to have their own way.
25. Children's wants are just as important as those of an adult.
26. The teacher is usually to blame when pupils fail to follow directions.
27. A child should be taught to obey an adult without question.
28. The boastful child is usually over-confident of his ability.
29. Children have a natural tendency to be unruly.
30. A teacher cannot place much faith in the statements of pupils.

GO ON TO THE NEXT PAGE

SA—Strongly agree
A—Agree

U—Undecided
or uncertain

D—Disagree
SD—Strongly disagree.

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| 31. Some children ask too many questions. | 46. More "old-fashioned whippings" are needed today. |
| 32. A pupil should not be required to stand when reciting. | 47. The child must learn that "teacher knows best." |
| 33. The teacher should not be expected to manage a child if the latter's parents are unable to do so. | 48. Increased freedom in the classroom creates confusion. |
| 34. A teacher should never acknowledge his ignorance of a topic in the presence of his pupils. | 49. A teacher should not be expected to be sympathetic toward truants. |
| 35. Discipline in the modern school is not as strict as it should be. | 50. Teachers should exercise more authority over their pupils than they do. |
| 36. Most pupils lack productive imagination. | 51. Discipline problems are the teacher's greatest worry. |
| 37. Standards of work should vary with the pupil. | 52. The low achiever probably is not working hard enough and applying himself. |
| 38. The majority of children take their responsibilities seriously. | 53. There is too much emphasis on grading. |
| 39. To maintain good discipline in the classroom a teacher needs to be "hard-boiled." | 54. Most children lack common courtesy toward adults. |
| 40. Success is more motivating than failure. | 55. Aggressive children are the greatest problems. |
| 41. Imaginative tales demand the same punishment as lying. | 56. At times it is necessary that the whole class suffer when the teacher is unable to identify the culprit. |
| 42. Every pupil in the sixth grade should have sixth grade reading ability. | 57. Many teachers are not severe enough in their dealings with pupils. |
| 43. A good motivating device is the critical comparison of a pupil's work with that of other pupils. | 58. Children "should be seen and not heard." |
| 44. It is better for a child to be bashful than to be "boy or girl crazy." | 59. A teacher should always have at least a few failures. |
| 45. Course grades should never be lowered as punishment. | 60. It is easier to correct discipline problems than it is to prevent them. |

GO ON TO THE NEXT PAGE

SA—Strongly agree
A—Agree

U—Undecided
or uncertain

D—Disagree
SD—Strongly disagree

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| 61. Children are usually too sociable in the class-room. | 76. There is too much leniency today in the handling of children. |
| 62. Most pupils are resourceful when left on their own. | 77. Difficult disciplinary problems are seldom the fault of the teacher. |
| 63. Too much nonsense goes on in many class-rooms these days. | 78. The whims and impulsive desires of children are usually worthy of attention. |
| 64. The school is often to blame in cases of truancy. | 79. Children usually have a hard time following instructions. |
| 65. Children are too carefree. | 80. Children nowadays are allowed too much freedom in school. |
| 66. Pupils who fail to prepare their lessons daily should be kept after school to make this preparation. | 81. All children should start to read by the age of seven. |
| 67. Pupils who are foreigners usually make the teacher's task more unpleasant. | 82. Universal promotion of pupils lowers achievement standards. |
| 68. Most children would like to use good English. | 83. Children are unable to reason adequately. |
| 69. Assigning additional school work is often an effective means of punishment. | 84. A teacher should not tolerate use of slang expressions by his pupils. |
| 70. Dishonesty as found in cheating is probably one of the most serious of moral offenses. | 85. The child who misbehaves should be made to feel guilty and ashamed of himself. |
| 71. Children should be allowed more freedom in their execution of learning activities. | 86. If a child wants to speak or to leave his seat during the class period, he should always get permission from the teacher. |
| 72. Pupils must learn to respect teachers if for no other reason than that they are teachers. | 87. Pupils should not respect teachers anymore than any other adults. |
| 73. Children need not always understand the reasons for social conduct. | 88. Throwing of chalk and erasers should always demand severe punishment. |
| 74. Pupils usually are not qualified to select their own topics for themes and reports. | 89. Teachers who are liked best probably have a better understanding of their pupils. |
| 75. No child should rebel against authority. | 90. Most pupils try to make things easier for the teacher. |

GO ON TO THE NEXT PAGE

SA—Strongly agree
A—Agree

U—Undecided
or uncertain

D—Disagree
SD—Strongly disagree

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| 91. Most teachers do not give sufficient explanation in their teaching. | 106. A teacher should not be expected to do more work than he is paid for. |
| 92. There are too many activities lacking in academic respectability that are being introduced into the curriculum of the modern school. | 107. There is nothing that can be more irritating than some pupils. |
| 93. Children should be given more freedom in the classroom than they usually get. | 108. "Lack of application" is probably one of the most frequent causes for failure. |
| 94. Most pupils are unnecessarily thoughtless relative to the teacher's wishes. | 109. Young people nowadays are too frivolous. |
| 95. Children should not expect talking privileges when adults wish to speak. | 110. As a rule teachers are too lenient with their pupils. |
| 96. Pupils are usually slow to "catch on" to new material. | 111. Slow pupils certainly try one's patience. |
| 97. Teachers are responsible for knowing the home conditions of every one of their pupils. | 112. Grading is of value because of the competition element. |
| 98. Pupils can be very boring at times. | 113. Pupils like to annoy the teacher. |
| 99. Children have no business asking questions about sex. | 114. Children usually will not think for themselves. |
| 100. Children must be told exactly what to do and how to do it. | 115. Classroom rules and regulations must be considered inviolable. |
| 101. Most pupils are considerate of their teachers. | 116. Most pupils have too easy a time of it and do not learn to do real work. |
| 102. Whispering should not be tolerated. | 117. Children are so likeable that their shortcomings can usually be overlooked. |
| 103. Shy pupils especially should be required to stand when reciting. | 118. A pupil found writing obscene notes should be severely punished. |
| 104. Teachers should consider problems of conduct more seriously than they do. | 119. A teacher seldom finds children really enjoyable. |
| 105. A teacher should never leave the class to its own management. | 120. There is usually one best way to do school work which all pupils should follow. |

GO ON TO THE NEXT PAGE

SA—Strongly agree
A—Agree

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or uncertain

D—Disagree
SD—Strongly disagree

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- | | |
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| 121. It isn't practicable to base school work upon children's interests. | 136. A pupil should always be fully aware of what is expected of him. |
| 122. It is difficult to understand why some children want to come to school so early in the morning before opening time. | 137. There is too much intermingling of the sexes in extra-curricular activities. |
| 123. Children that cannot meet the school standards should be dropped. | 138. The child who stutters should be given the opportunity to recite oftener. |
| 124. Children are usually too inquisitive. | 139. The teacher should disregard the complaints of the child who constantly talks about imaginary illnesses. |
| 125. It is sometimes necessary to break promises made to children. | 140. Teachers probably over-emphasize the seriousness of such pupil behavior as the writing of obscene notes. |
| 126. Children today are given too much freedom. | 141. Teachers should not expect pupils to like them. |
| 127. One should be able to get along with almost any child. | 142. Children act more civilized than do many adults. |
| 128. Children are not mature enough to make their own decisions. | 143. Aggressive children require the most attention. |
| 129. A child who bites his nails needs to be shamed. | 144. Teachers can be in the wrong as well as pupils. |
| 130. Children will think for themselves if permitted. | 145. Young people today are just as good as those of the past generation. |
| 131. There is no excuse for the extreme sensitivity of some children. | 146. Keeping discipline is not the problem that many teachers claim it to be. |
| 132. Children just cannot be trusted. | 147. A pupil has the right to disagree openly with his teachers. |
| 133. Children should be given reasons for the restrictions placed upon them. | 148. Most pupil misbehavior is done to annoy the teacher. |
| 134. Most pupils are not interested in learning. | 149. One should not expect pupils to enjoy school. |
| 135. It is usually the uninteresting and difficult subjects that will do the pupil the most good. | 150. In pupil appraisal effort should not be distinguished from scholarship. |



Cattell Intelligence Tests

Group and Individual

Prepared by R. B. CATTELL, M.A., B.Sc., Ph.D. (Lond.)

SCALE III: FORM A

DO NOT TURN OVER THIS PAGE TILL YOU ARE TOLD TO DO SO

Name.....
(Surname last)

Age last birthday.....years
(in figures)

Birthday.....
(Month and day)

4. Form or Standard.....

5. School.....

6. Town.....

7. To-day's date.....19.....

INSTRUCTIONS

The questions in this test are to find out how clearly you can *think*; they are not concerned with how much you *know*. Work through them *as carefully and quickly as you can*. Once you have started you must not ask any questions, but if you *read through the instructions at the beginning of each test* you will always know exactly what you have to do. Each test has to be finished in a certain time, so do not waste time on examples that you cannot do. If you get to the end of a test before time is called, you must not turn to the next page unless you are told to do so at the bottom.

You will not have to write anything at all, but only to underline certain words and place crosses in certain squares.

(Do not write below this line.)

REMARKS, Etc.

1.
2.
3.
4.
5.
6.

SCORES

Test 1.

„ 2.

„ 3.

„ 4.

„ 5.

„ 6.

Total

Mental age

Actual age

I.Q.

Candidate's reference number.....

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TEST 1

SYNONYMS

(Time allowed: 8 minutes.)

INSTRUCTIONS. Look at the first word in the line. Then look at the five words or phrase in brackets which follow it, and choose from them the word or phrase that has most nearly same meaning as the first word. When you have found it underline it.

Here are two examples already done:

(1) Sad means the same as (unlucky, quiet, unhappy, hurt, lost).

(2) Mend means the same as (help, repair, patch, make, improve).

Now work right down the page in the same way.

1. Forbid means the same as (contradict, hinder, prohibit, restrain, defend).
2. Achieve means the same as (finish, win, acquire, accomplish, find).
3. Escort means the same as (accompany, watch, follow, join, defend).
4. Honest means the same as (reasonable, right, upright, kind, outspoken).
5. Faith means the same as (sincerity, belief, honesty, credit, ignorance).
6. Many means the same as (frequent, several, numerous, various, herds).
7. Angular means the same as (blunt, stiff, abrupt, branching, cornered).
8. Continue means the same as (persevere, endure, last, go on, stay).
9. Increase means the same as (grow, become greater, spread, rise up, magnify).
10. Zeal means the same as (enthusiasm, energy, activity, passion, speed).
11. Excite means the same as (move, irritate, interest, arouse, attract).
12. Careful means the same as (exact, heedful, strict, anxious, dutiful).
13. Indistinct means the same as (imperfect, doubtful, hidden, unclear, faint).
14. Distribute means the same as (allot, spread, give, divide, settle).
15. Awake means the same as (watchful, cautious, conscious, alive, energetic).
16. Refuse means the same as (deny, decline, oppose, object, repel).
17. Blend means the same as (mix, combine, mingle, confuse, add).
18. Act means the same as (deed, feat, crime, achievement, performance).
19. Space means the same as (distance, size, room, measure, content).
20. Responsible means the same as (accountable, trustworthy, concerned, liable, worried).

If you have time to spare you may go over the test again to make sure that your answers are correct. This applies to every test in the Scale.

DO NOT TURN TO THE NEXT PAGE

TEST 2

CLASSIFICATION

(Time allowed: 11 minutes.)

INSTRUCTIONS. Look at these five words:

Dog, elephant, sparrow, cow, lion.

They are all names of animals except 'sparrow,' so 'sparrow' is underlined. In the test you must underline in each row the word or phrase that does not belong to the same class as the other four—that is, pick out the word or phrase most unlike the others in meaning and underline it.

Here is another example:

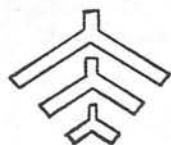
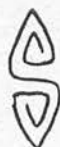
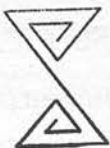
Hot, freezing, warm, cool, wet.

Now continue.

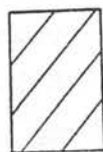
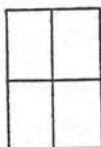
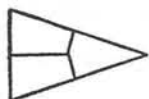
1. Run, skate, dance, slide, sit.
2. Carpenter, bricklayer, decorator, farmer, plumber.
3. Hurt, diseased, damaged, worried, crippled.
4. Bag, basket, hat, pocket, bucket.
5. Everywhere, far, there, somewhere, here.
6. Captain, secretary, king, president, duke.
7. Sword, gun, helmet, spear, pistol.
8. United, steady, agreed, tied, combined.
9. Examine, compare, analyse, conclude, study.
10. Curtain, door, veil, shutter, screen.
11. Any, few, some, most, all.
12. Profit, debt, wealth, loan, loss.
13. Wise, lovely, base, kind, dishonest.
14. Page, brick, word, table, musical note.
15. Once, only, alone, first, second.
16. Growl, speak, hum, whistle, whine.
17. Father, grandmother, sister, grandson, daughter.
18. Rest, feed, breathe, move, have offspring.
19. Monotonous, uneven, zigzag, wide, regular.
20. Candle, sun, moon, electric light, gaslight.
21. Motor-car, literature, rules, shoe, foot.

Treat the geometrical figures on the next page in the same way. The first example is done for you.

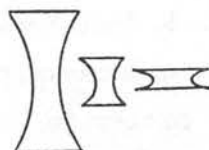
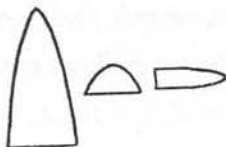
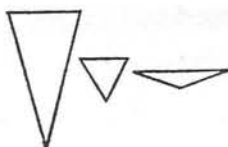
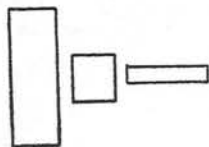
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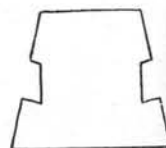
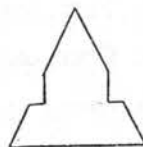
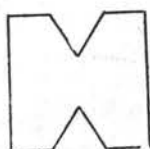
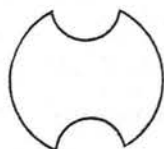
22.



23.



24.



25.

TEST 3

OPPOSITES

(Time allowed: 8 minutes.)

INSTRUCTIONS. Look at the first word in the line. Then pick out from among the five words or phrases in brackets the one that is most nearly opposite in meaning to the first word.

Here are two examples already worked out:

(1) Dry is the opposite of (cold, slimy, wet, flooded, cloudy).

(2) Full is the opposite of (hollow, light, thin, lean, empty).

Now underline the opposites in the examples below.

1. Hinder is the opposite of (lighten, disentangle, help, favour, improve).
2. Grow is the opposite of (die, return, starve, diminish, wrinkle).
3. Common is the opposite of (strange, rare, valuable, peculiar, quaint).
4. Wicked is the opposite of (heavenly, polite, righteous, unselfish, quiet).
5. Allow is the opposite of (refuse, deny, forbid, punish, remove).
6. Complete is the opposite of (partial, empty, spoilt, small, indefinite).
7. Exceed is the opposite of (shame, shrink, just miss, fall short of, disappoint).
8. Unlike is the opposite of (similar, equal, inseparable, twin, balanced).
9. Unaided is the opposite of (befriended, watched, helped, accompanied, paid).
10. Apology is the opposite of (refusal, satisfaction, irritation, insult, letter).
11. Interrupted is the opposite of (continuous, entire, assisted, gradual, repeated).
12. Improve is the opposite of (destroy, stain, cheapen, injure, bend).
13. Coarse is the opposite of (polite, thin, refined, nice, sharp).
14. Supply is the opposite of (sale, demand, hunger, poverty, hindrance).
15. Recover is the opposite of (decay, return, die, relapse, ruin).
16. Restore is the opposite of (damage, undermine, break, pull down, lapse).
17. Abstract is the opposite of (particular, peculiar, personal, special, simple).
18. Beyond is the opposite of (here, there, within, near by, including).
19. Reveal is the opposite of (lose, find, hide, drop, stray).
20. General is the opposite of (isolated, private, special, personal, peculiar).

TEST 4

ANALOGIES

(Time allowed: 11 minutes.)

INSTRUCTIONS. First read this example:

'Fish' is to 'water' as 'bird' is to (land, wave, air, branch, wind).

Water is the medium in which fish move, so air is underlined, because it is the medium in which birds move.

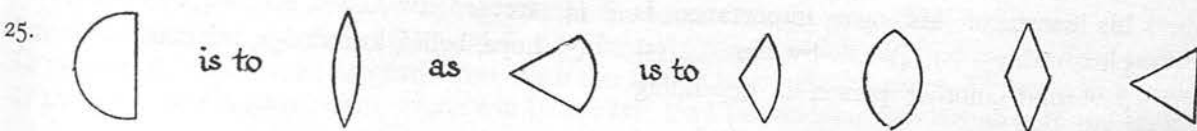
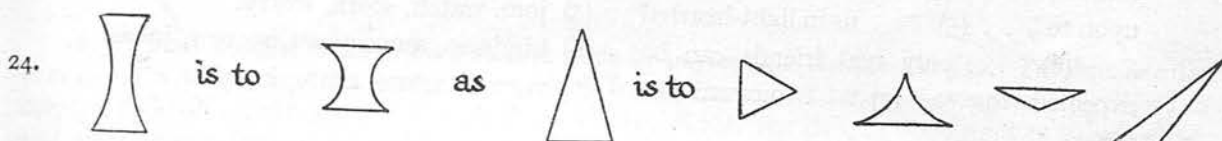
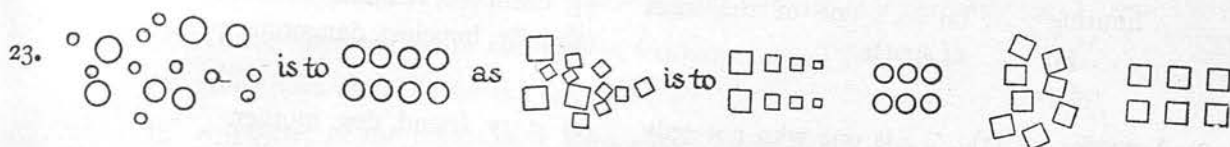
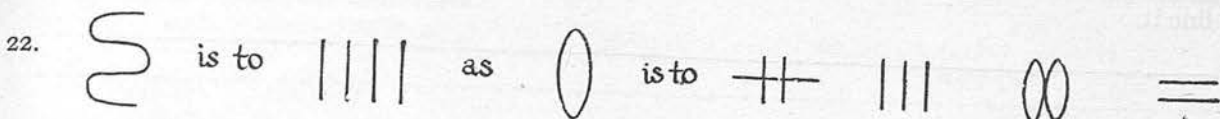
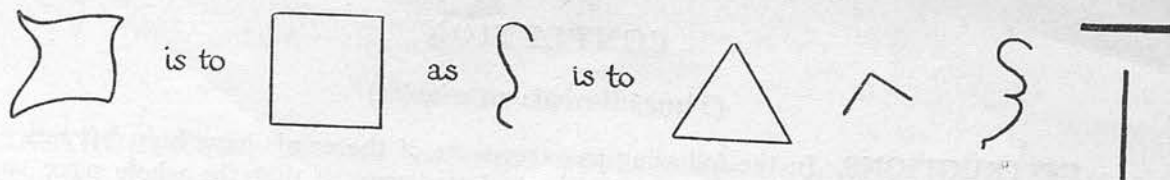
Read this example also:

'Wear' is to 'clothes' as 'eat' is to (hat, table, mustard, food, fork).

Now work out the following examples in the same way.

1. 'Safe' is to 'danger' as 'alone' is to (sadness, hope, company, enemy, desert).
2. 'Kind' is to 'good' as 'polite' is to (brave, strong, loyal, well behaved, spirited).
3. 'Place' is to 'position' as 'pattern' is to (square, shape, colour, beauty, curves).
4. 'Own' is to 'rich' as 'know' is to (wise, kind, conceited, old, absent-minded).
5. 'Tired' is to 'work' as 'happy' is to (sleep, rest, success, exercise, eating).
6. 'Probable' is to 'possible' as 'expect' is to (believe, know, hope, watch, despair).
7. 'Speech' is to 'hear' as 'picture' is to (know, appreciate, paint, measure, see).
8. 'Ruin' is to 'accident' as 'wound' is to (blood, knife, skin, hate, bandage).
9. 'Listen' is to 'hear' as 'look' is to (notice, see, observe, learn, watch).
10. 'Combine' is to 'mix' as 'team' is to (colours, liquids, enemies, army, crowd).
11. 'Event' is to 'truth' as 'portrait' is to (likeness, colour, beauty, skill in painting, artist).
12. 'Statue' is to 'shape' as 'song' is to (tune, beauty, notes, words, poetry).
13. 'Black' is to 'grey' as 'pain' is to (discomfort, wound, anger, illness, pleasure).
14. 'Conscience' is to 'morals' as 'referee' is to (game, order, team, score, rules).
15. 'Clock' is to 'time' as 'tailor' is to (suit, cloth, scissors, tape, pattern).
16. 'Season' is to 'rhythm' as 'day' is to (sun, interval, monotony, repetition, succession).
17. 'Surprise' is to 'strange' as 'fear' is to (angry, peculiar, dirty, anxious, terrible).
18. 'Umbrella' is to 'raindrops' as 'army' is to (enemy, warfare, invasion, country, general).
19. 'Message' is to 'information' as 'bullet' is to (rifle, aim, soldier, death, lead).
20. 'Soon' is to 'never' as 'near' is to (not far, seldom, far away, widely, nowhere).
21. 'Justice' is to 'laws' as 'idea' is to (judge, words, feelings, principles, memories).

TURN TO NEXT PAGE. Treat the geometrical figures in the same way. The first example done for you.



TEST 5

COMPLETION

(Time allowed: 10 minutes.)

INSTRUCTIONS. In the following passages some of the words have been left out. You have to fill in the blanks, with one word to each dotted gap, so that the whole piece sounds sensible and right. Do not actually write words in the spaces, but, in each case, choose one from the row by the side that is numbered the same as the blank you are dealing with, and underline it.

-
1. In spite of . . . (1) . . . in firearms and
 our increased knowledge of the . . . (2)
 . . . of wild beasts . . . (3) . . . game
 hunting . . . (4) . . . one of the most
 . . . (5) . . . of sports.
- (1) improvements, explosions, flaws, fashions.
 (2) teeth, food, colour, habits.
 (3) big, tame, preserved, ball.
 (4) cheapens, remains, weakens, seems.
 (5) jolly, hopeless, dangerous, peculiar.
2. A good . . . (1) . . . is one who not only
 . . . (2) . . . our pleasures with us, but
 also stands by us in . . . (3) . . . ; for
 although . . . (4) . . . may be depended
 upon to . . . (5) . . . us in light-hearted
 . . . (6) . . . , only real friends can be
 expected to . . . (7) . . . our misfor-
 tunes.
- (1) story, friend, dog, mother.
 (2) enjoys, spoils, spends, divides.
 (3) water, joy, trouble, amusement.
 (4) nobody, acquaintances, relatives, everyone.
 (5) join, watch, scorn, worry.
 (6) kindness, amusement, sorrow, jokes.
 (7) regret, endure, share, know.
3. A . . . (1) . . . man will often . . . (2)
 . . . to give advice even on subjects
 about which he . . . (3) . . . little; for
 his sense of his own importance is
 pleasurable . . . (4) . . . by the . . . (5)
 . . . that another person is depending
 upon him.
- (1) kind, conceited, proud, ignorant.
 (2) begin, pretend, ask, try.
 (3) cares, knows, thinks, talks.
 (4) aroused, awakened, soothed, increased.
 (5) hope, belief, knowledge, mistake.
4. . . . (1) . . . it is a . . . (2) . . . to do to
 each . . . (3) . . . to his deserts, . . .
 (4) . . . good for good as well as repress-
 ing . . . (5) . . . by evil, it necessarily
 . . . (6) . . . that we should treat all
 . . . (7) . . . well (when no higher duty
 forbids) who have . . . (8) . . . equally
 well of us.
- (1) When, If, Although, Sometimes.
 (2) burden, duty, pleasure, sin.
 (3) nearly, favourably, according, oppositely.
 (4) exchanging, offering, substituting, return-
 (5) evil, good, it, pleasure. [ing.
 (6) prevents, follows, happens, forbids.
 (7) servants, very, equally, men.
 (8) deserved, asked, thought, heard.

TEST 6

INFERENCES

(Time allowed : 18 minutes.)

INSTRUCTIONS. This test consists of a number of separate problems, puzzles, and tests of reasoning. Below each of them will be found four or five words, sentences, or numbers which make answers to the problem concerned. In each case choose the one that makes the best answer and put a cross in the square standing at the right-hand end of it. The problems at the beginning are easier than those that come later.

1. Half the pupils in a school have passed the matriculation examination. A quarter of the pupils can swim. A third of the boys play in football teams. Three-quarters of the school are under seventeen years of age. Which *one* of the following statements is certainly true?

- (1) All the boys who swim also play in football teams. ☐
- (2) Some boys under seventeen can swim. ☐
- (3) A quarter of the pupils have both passed matriculation and can swim. ☐
- (4) Half the girls in the school are over seventeen years of age. ☐
- (5) Some pupils under seventeen have passed matriculation. ☐

2. A man bought a horse for £20 and gave in payment a cheque for £30. The horsedealer persuaded a shopkeeper to change the cheque for him, and the buyer, having received his £10 change, rode off on the horse and was not seen again. Later the cheque was found to be valueless, and the horsedealer had to refund the shopkeeper the amount he had received. The horsedealer had himself bought the horse for £10. How much did the horsedealer lose altogether?

- (1) Nothing. ☐
- (2) £20. ☐
- (3) £10. ☐
- (4) £30. ☐
- (5) £40. ☐

3. In my aquarium I have all together in the same tank (1) garpa fish, which will eat both tennel fish and eels, (2) tennel fish, which eat eels, and (3) eels, which will feed on the dead bodies of garpa fish. The tennel fish can swim much too fast to be caught by garpa fish, even in a tank. If no other food is given them, which will be the last kind (or kinds) of fish left alive in the tank?

- (1) Eels. ☐
- (2) Garpa fish and tennel fish. ☐
- (3) Tennel fish. ☐
- (4) Garpa fish. ☐
- (5) Tennel fish and eels. ☐

4. It is said that the age at which people marry in England is steadily rising, because

- (1) People do not start earning until later in life than formerly. ☐
- (2) People do not fall in love so early. ☐
- (3) A man needs to earn more when he is married than when he is single. ☐
- (4) Women are less attractive. ☐

CONTINUE ON NEXT PAGE

5. All firs are coniferous trees. All coniferous trees are evergreens. Mark a cross against the true statement below.

- (1) All evergreens are coniferous. ☐
- (2) All coniferous trees are firs. ☐
- (3) Only a few coniferous trees are evergreens. ☐
- (4) All evergreens are firs. ☐
- (5) All firs are evergreens. ☐

6. A man, pointing to a portrait, exclaimed, "I have no sisters or brothers, but that man's father is my father's son."

The man whose portrait he was looking at was

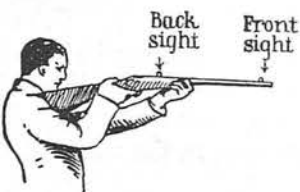
- (1) His father. ☐
- (2) Himself. ☐
- (3) His son. ☐
- (4) His uncle. ☐

7. A man who cannot read, write, or spell has just received a letter which he must answer at once. His three friends all know how to read and write, but one is deaf, another is blind, and the third is dumb. With whose aid will he be able to read and reply to the letter most effectively?

He will need

- (1) The dumb man. ☐
- (2) The dumb man and the deaf man. ☐
- (3) The blind man and the dumb man. ☐
- (4) The deaf man and the blind man. ☐
- (5) The blind man. ☐
- (6) The deaf man. ☐

8. The sights of my gun need adjusting, for when I aim directly at the target the bullets always go to the left. Which of the following adjustments can I make in order that the gun may fire more accurately? Indicate more than one if more than one satisfy the required conditions.



- (1) Move the front sight a little to the right. ☐
- (2) Move the back sight a little to the right. ☐
- (3) Move both sights a little to the right. ☐
- (4) Move the back sight a little to the left. ☐
- (5) Move the front sight a little to the left. ☐

9. There are two secret codes. In each of them one secret sign always stands for one letter of the alphabet. Below you will find the words TUB and BUT written in the first code, but you do not know which word comes first. The words TEA and PIP have been written in the second code, together with one of the words that have already been written in the first code (TUB or BUT).

First code

И Г Ъ

Ъ Г И

Second code

Ө Д Ө

Ф Ъ К

К И Ч

The second word in the first code is the same as the second word in the second code. Now, one of the words below is the word BEAT written in the second code. Find out which it is and mark a cross in the square against it.

- (1) $\Phi \Pi \Upsilon \mathbb{K}$. ☐ (2) $\Phi \Upsilon \Pi \mathbb{K}$. ☐ (3) $\mathbb{K} \Upsilon \Pi \Phi$. ☐ (4) $\mathbb{K} \Pi \Upsilon \Phi$. ☐
(5) $\Phi \Upsilon \mathbb{K} \Pi$. ☐

10. In the west end of the town all the houses have either electric light or gas, but not both. So far the only houses with electric light are in the west end of the town. Which of the following can I say with certainty?

- (1) In other parts of the town some houses have both oil and gas lighting. ☐
(2) There is no gas lighting in the east of the town. ☐
(3) There are no houses in the town with both gas and electric light. ☐
(4) There are more houses with gas than with electric light. ☐
(5) The newest houses have both gas and electric light. ☐

11. Smith and Jones started off together to walk to a neighbouring town. Smith covered the first half of the distance at a speed one mile an hour faster than that of Jones. He covered the second half of the distance at a speed one mile an hour slower than Jones. Jones walked at a constant speed all the way.

Indicate which of the following statements you consider to be true.

- (1) They finished together. ☐
(2) Smith finished first. ☐
(3) Jones finished first. ☐
(4) Smith and Jones were together at the half-way point. ☐

12. A clerk, in writing down a sum of money at the bottom of a column, accidentally put the pence in the shillings column and the shillings in the pence column. As a result of this there was an error of 1s. 10d. when the column was totalled. The next day he again entered a sum of money with the shillings and pence in the reverse order, but he was surprised to find that although the sum entered was quite different from that entered wrongly the day before, the error in the total for the column was exactly the same (1s. 10d.). Place a cross against the two sums of money that he entered up wrongly.

- (1) 3s. 1d. ☐ (2) 3s. 8d. ☐ (3) 3s. 4d. ☐ (4) 7s. 6d. ☐ (5) 5s. 7d. ☐
(6) 2s. 1d. ☐

If you have time you may run over the questions in this test again, but you must not turn back to earlier tests.

First published in Great Britain February 1930
by GEORGE G. HARRAP & CO. LTD
182 High Holborn, London, W.C.1
Reprinted: January 1932; May 1933; October 1934

Second Edition, revised, published March 1935
Reprinted: October 1935; February 1937; May 1937;
March 1939; August 1939; April 1942; September 1942;
March 1943; October 1944; February 1946;
December 1946; January 1948; September 1948;
November 1949; February 1951; May 1952; July 1954;
September 1956; January 1959; July 1960; January 1962;
June 1962; June 1963; June 1964

Test of g: Culture Fair Scale 3, Form A

Prepared by R. B. Cattell and A. K. S. Cattell

Name _____ Sex _____
First Last (Write M or F)

Name of School (or Address) _____

Today's Date _____ Grade (or Class) _____

Date of Birth _____ Age _____
Month Day Year Years Months

Test	Score	Remarks
1		
2		
3		
4		
		Total Score

M.A. _____

C.A. _____

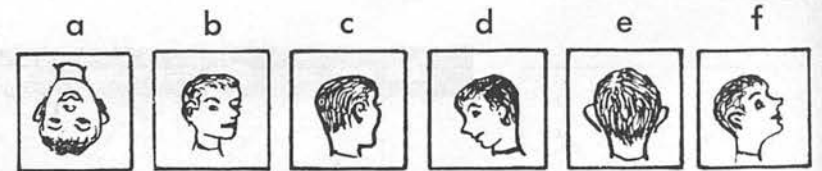
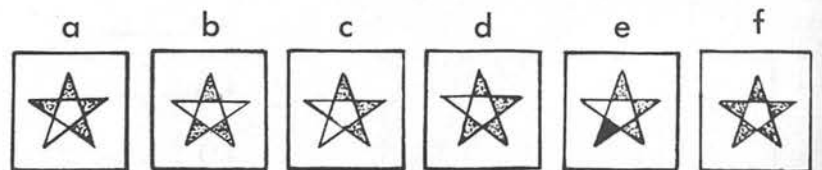
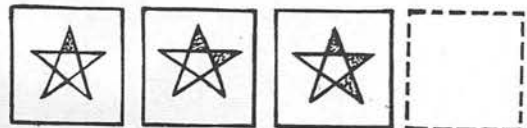
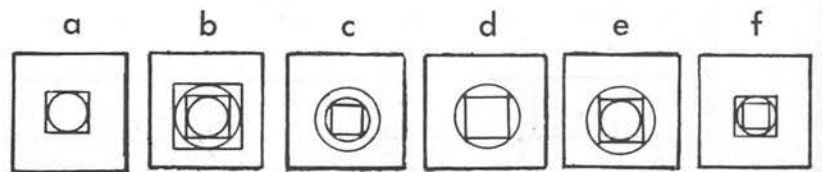
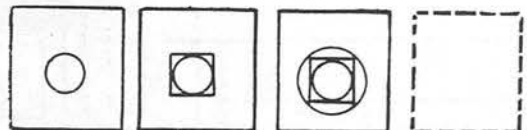
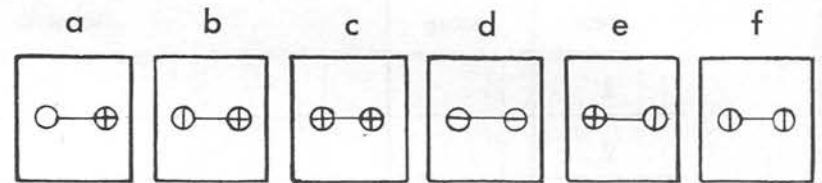
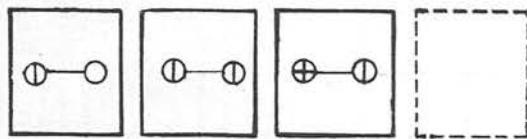
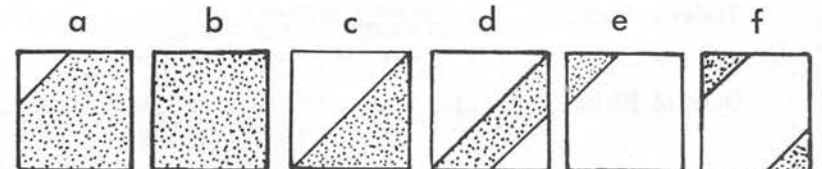
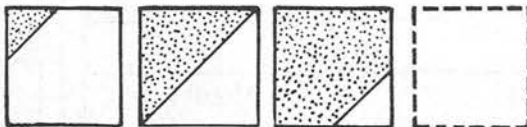
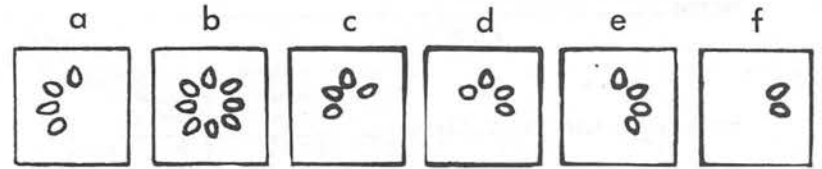
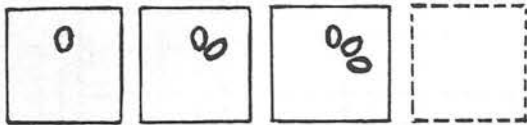
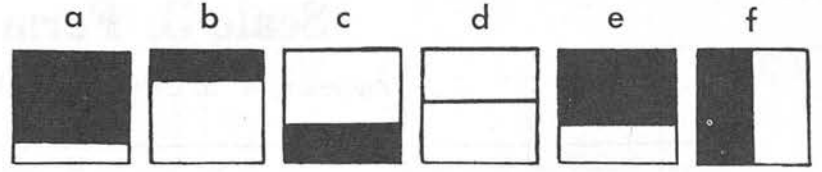
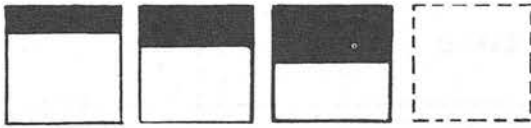
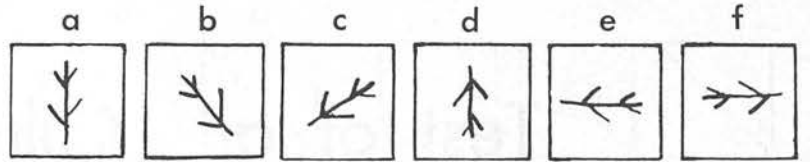
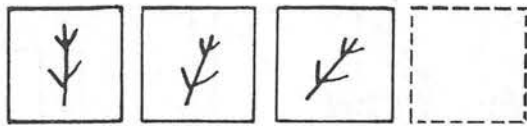
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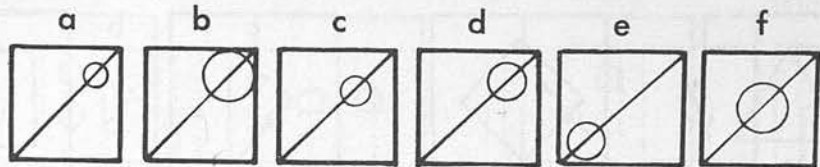
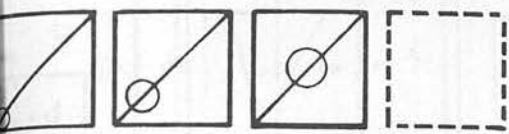
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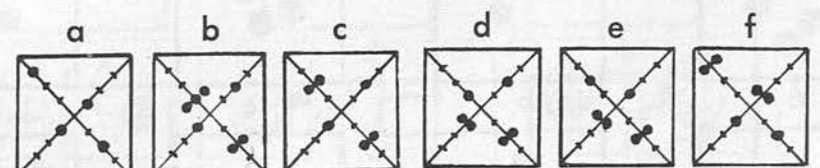
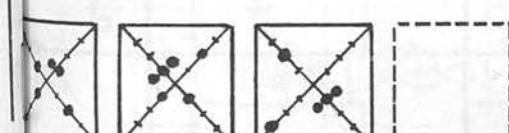
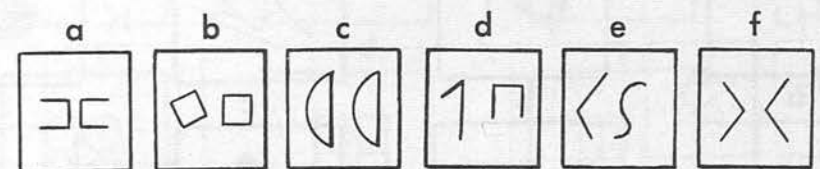
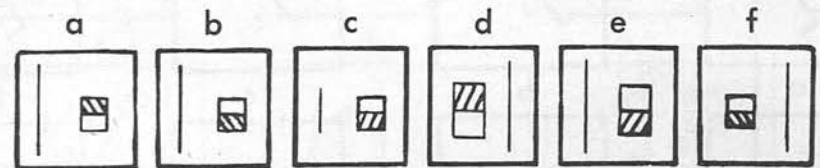
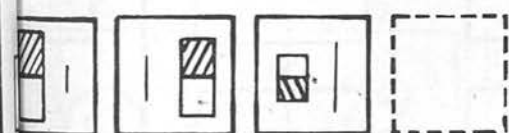
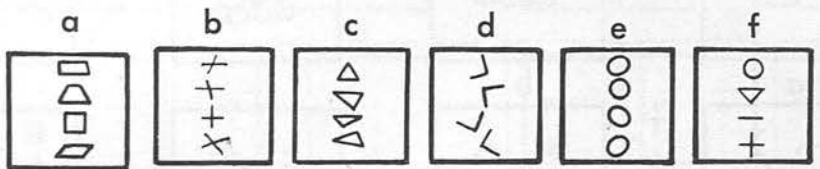
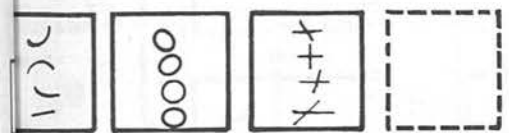
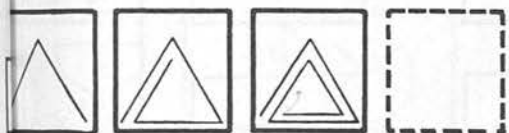
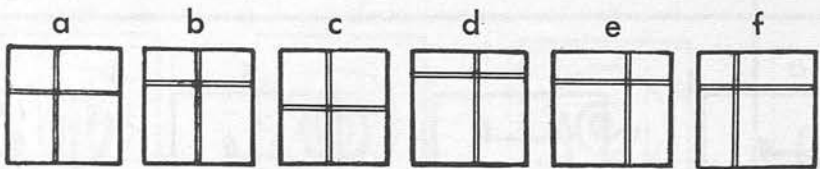
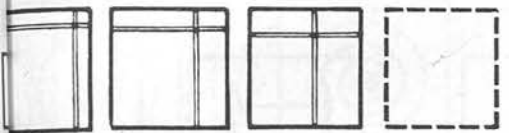
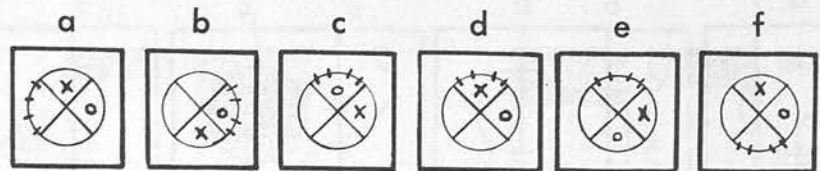
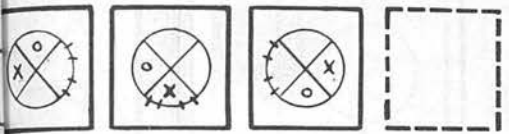
TEST 1

Examples





Answers



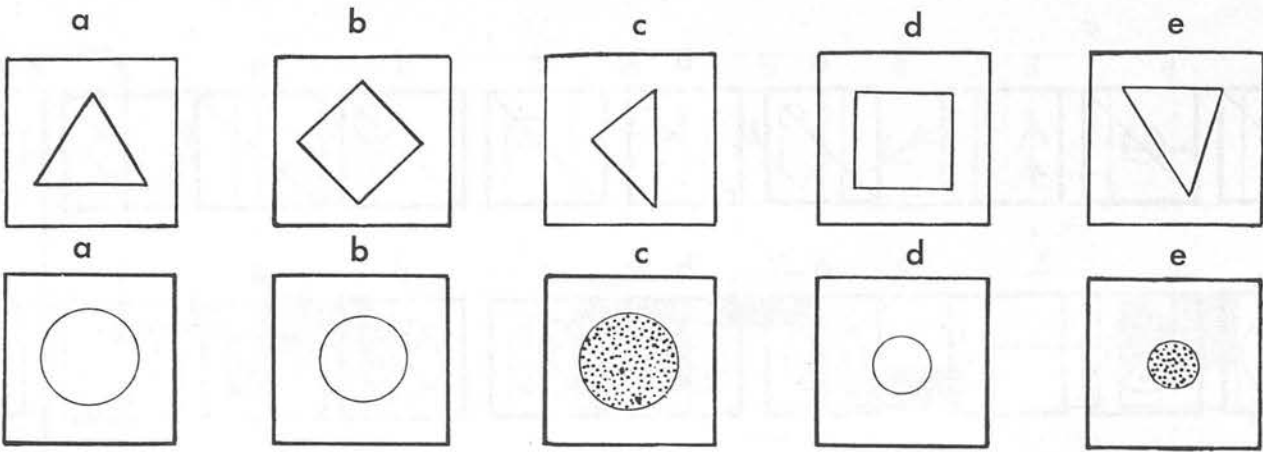
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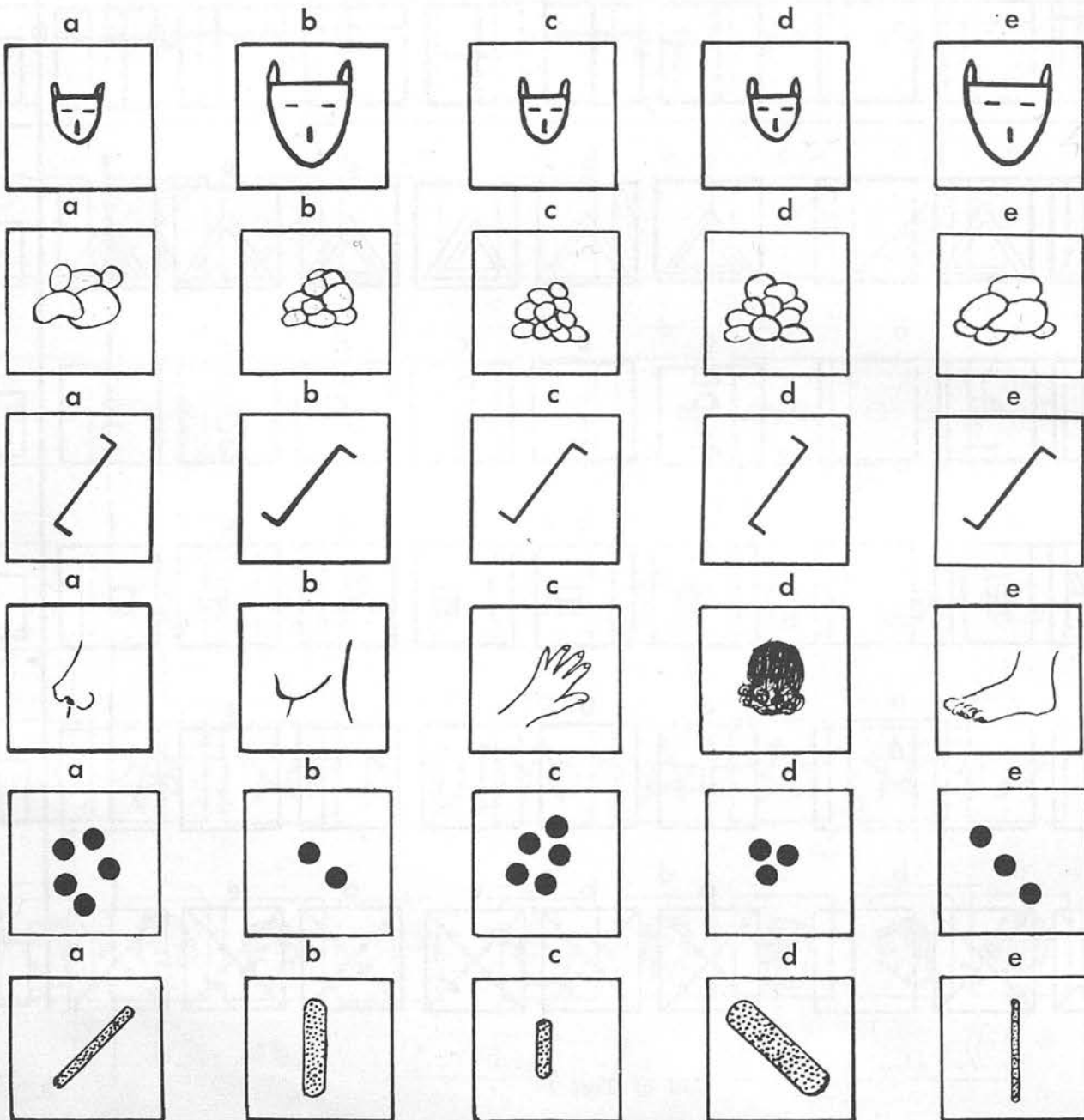
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Examples

Answer

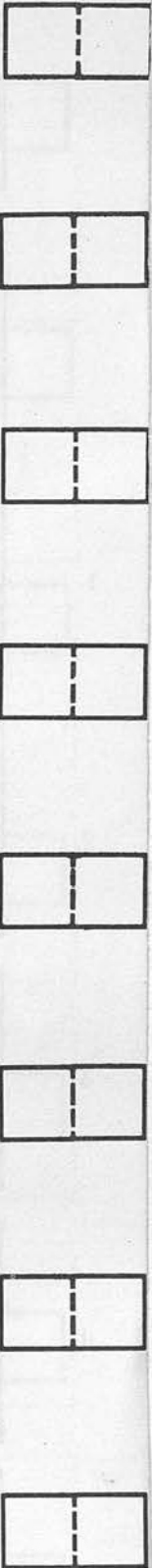
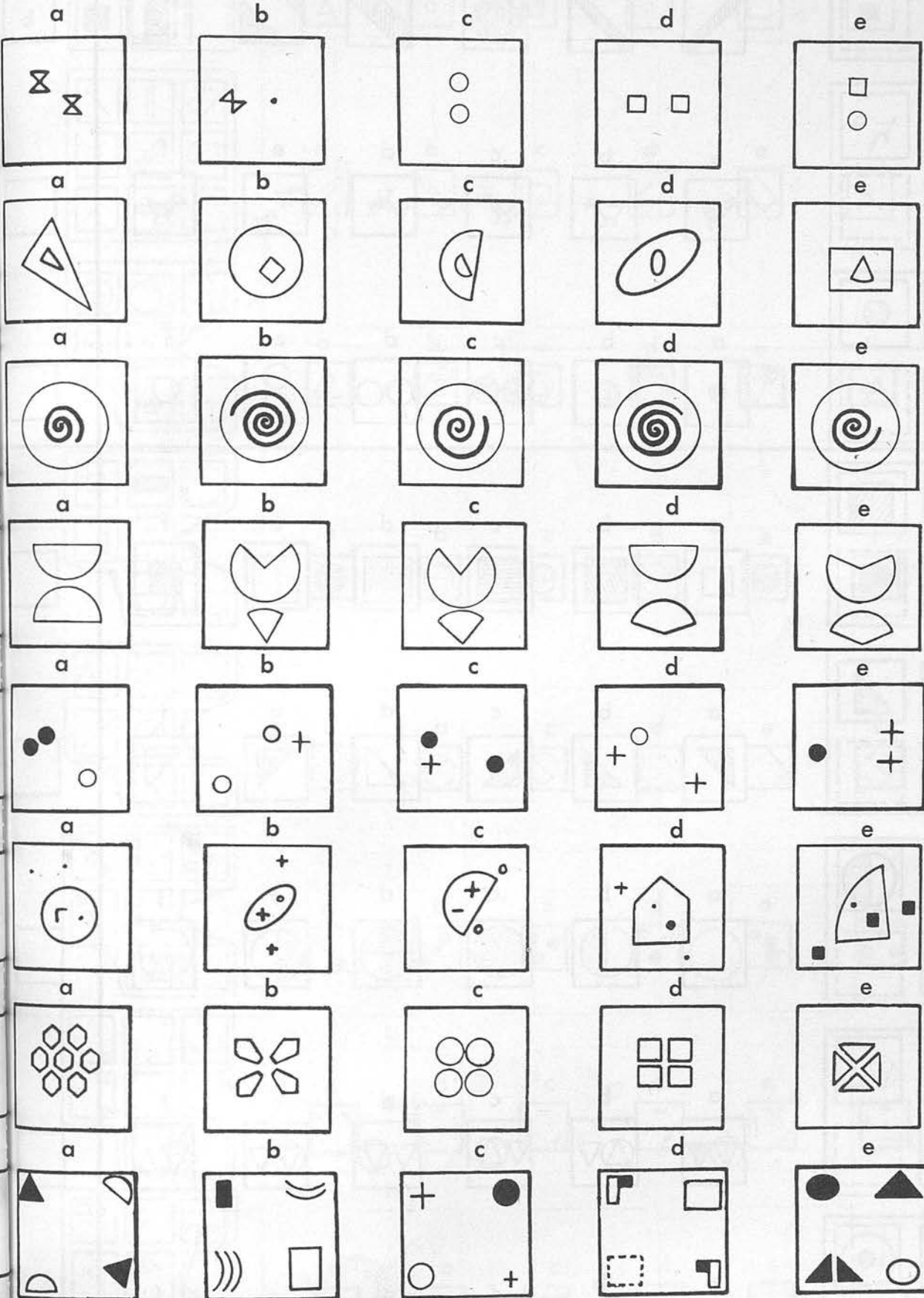


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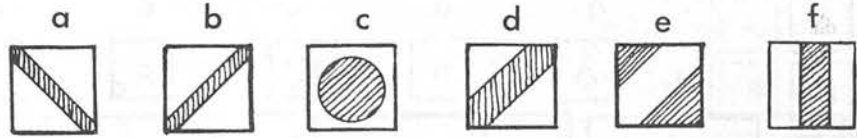
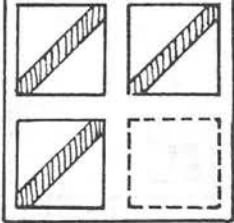
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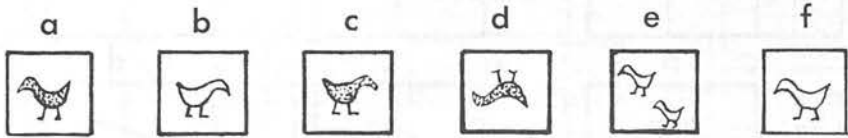
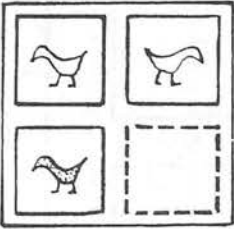


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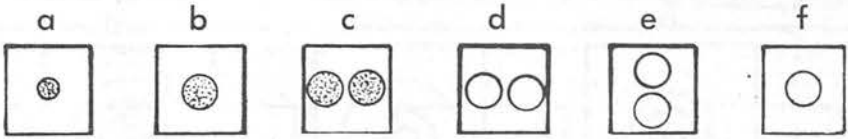
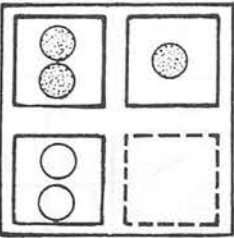
TEST 3



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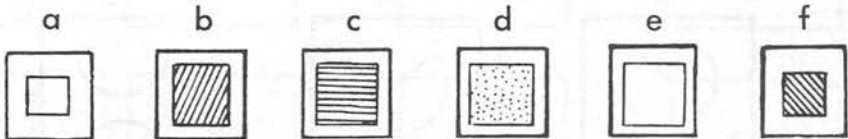
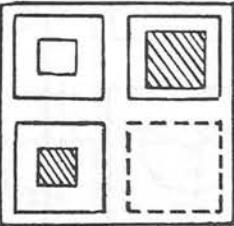


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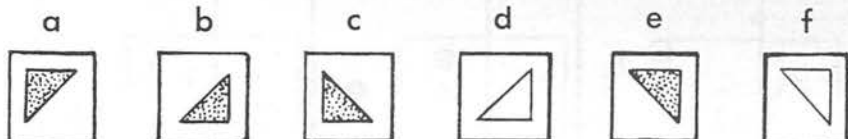
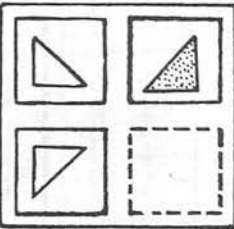
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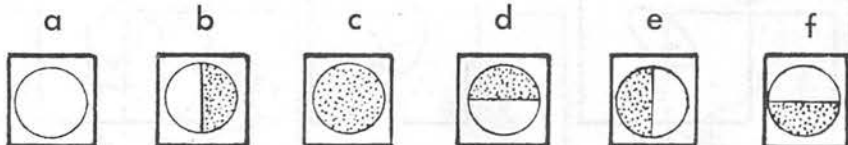
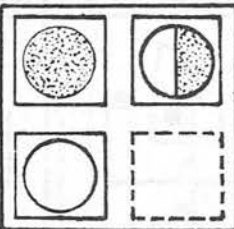
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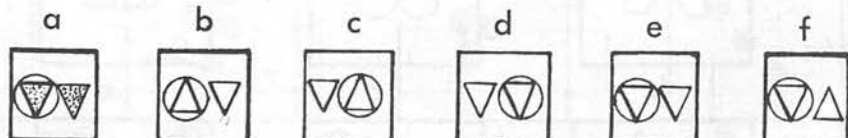
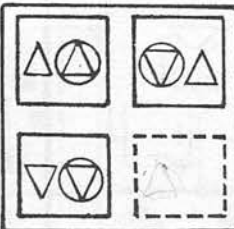
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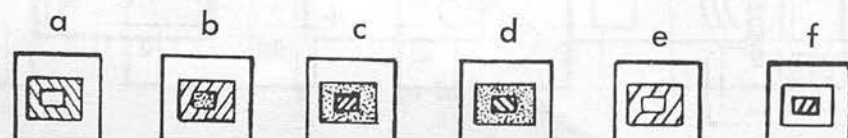
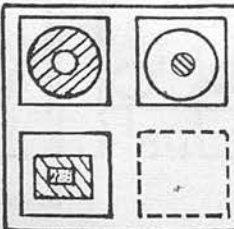
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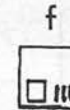
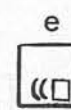
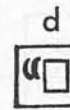
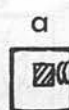
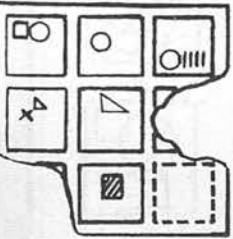
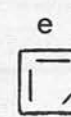
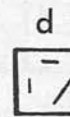
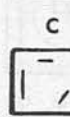
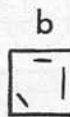
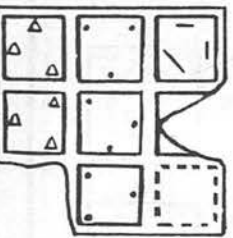
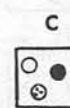
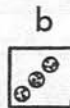
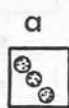
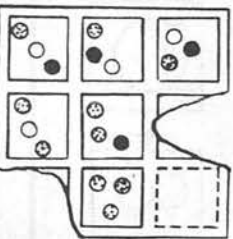
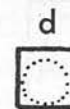
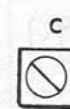
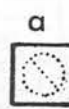
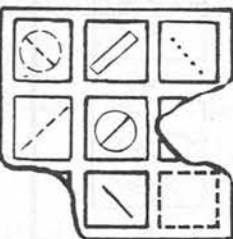
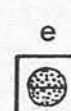
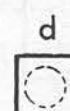
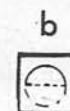
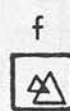
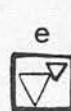
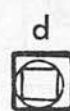
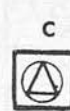
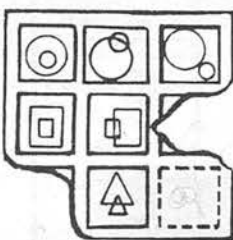
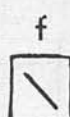
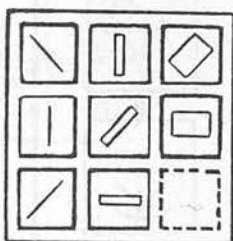
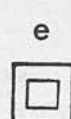
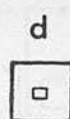
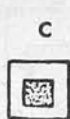
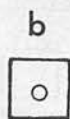
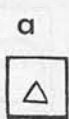
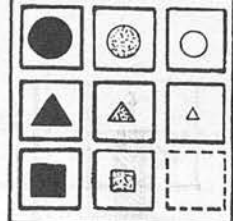
12.

5.



13.

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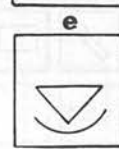
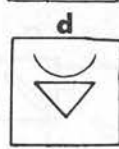
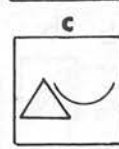
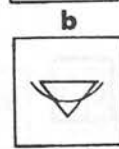
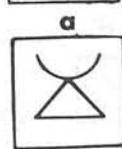
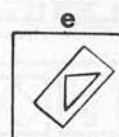
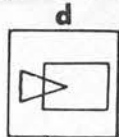
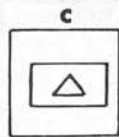
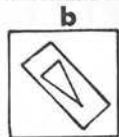
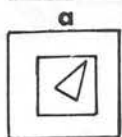
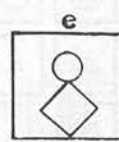
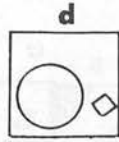
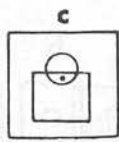
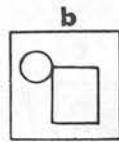
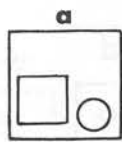
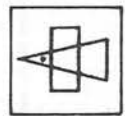
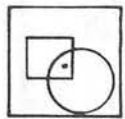
End of Test 3

7.

STOP! Do not turn the page until told to do so.

TEST 4

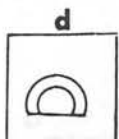
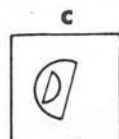
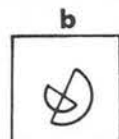
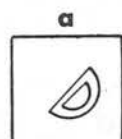
Examples



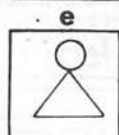
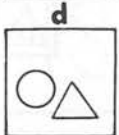
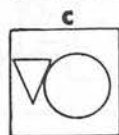
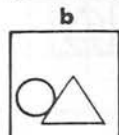
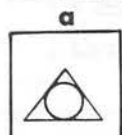
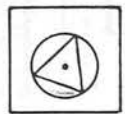
Answer

c

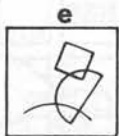
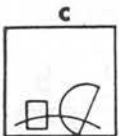
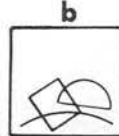
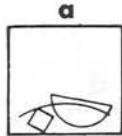
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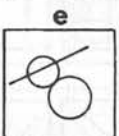
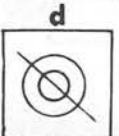
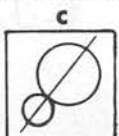
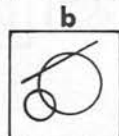
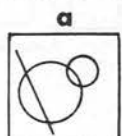
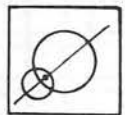
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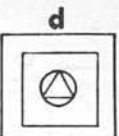
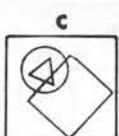
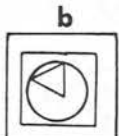
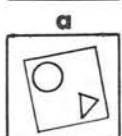
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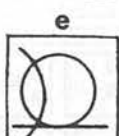
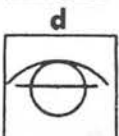
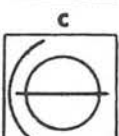
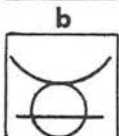
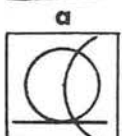
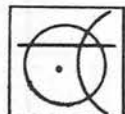
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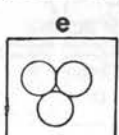
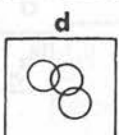
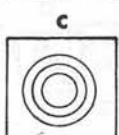
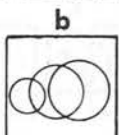
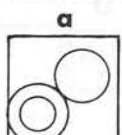
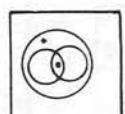
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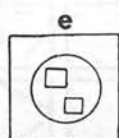
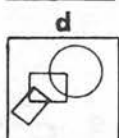
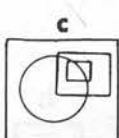
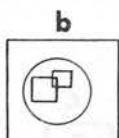
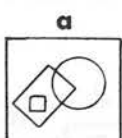
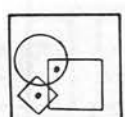
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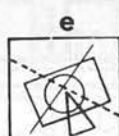
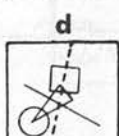
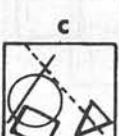
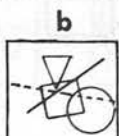
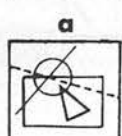
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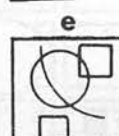
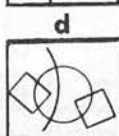
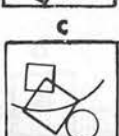
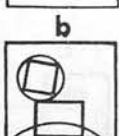
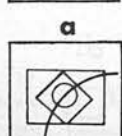
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9.



10.



End of Test 4

CITY OF CARDIFF TRAINING COLLEGE.

SURNAME.....

INITIALS.....

CONFIDENTIAL1st. YearCollege Reaction Questionnaire.Christmas Term 1963.

SCRIPT

CODE NO.

SEX

This questionnaire is part of an investigation into what students themselves think and feel about various topics. Your responses will be strictly confidential and your views will not be disclosed to anyone. When your paper is handed in it will be allocated a code number and your name will be cut off. Your anonymity is guaranteed and your replies will not have any effect upon your professional career or prejudice your examination results.

Please answer honestly and frankly.

A.G.J.

1. Why did you come to a Training College rather than a University?.....

2. Would you have preferred to go to a University?.....

3. Why did you answer question 2 as you have done?.....

4. If this college offered a degree course would you choose to enter it although the course might be more difficult?.....

5. All student teachers face some problems. Some of these are listed below. Add any others which may occur to you.

(a) Show by a cross x how you feel most students are affected.

Difficulties with a Main Subject

Difficulties with a Subsidiary Subject

Difficulties of relations with members of staff.

Difficulties of relations with other students

Difficulties in the preparation of lessons

Problems of Teaching Technique

Problems of Class Discipline

RANGE OF DIFFICULTIES.

Very Many.	Many	Some	Few	Very Few.

(b) Show by a circle O how you feel you are personally affected.

6. Name what you consider to be the three most important characteristics of a good teacher 1.

2. 3.

7. Name what you consider to be the three most important characteristics of a bad teacher 1.....
2..... 3.....
8. What do you consider to be your three main good characteristics?
1..... 2.....
3.....
9. What do you consider to be your three main bad characteristics?
1..... 2.....
3.....
10. Do you approve of Corporal Punishment?.....
Why.....
- 11(i) What changes would most students like to see in Teacher Training?.....
.....
(ii) What changes would you most like to see in Teacher Training?
.....
12. Put in order of importance the things which most attract you about teaching
.....
13. What are you most looking forward to during your college career?
.....
14. What are you most dreading during your college career?
.....
15. In a Training College course attention is directed towards
(a) The subjects you are going to teach (b) The technique you will use in teaching (c) The Pupils you will teach.
Place these letters in what you consider to be their importance.....
16. How well do you estimate you will do in your final examinations?

	Very Good Pass.	Good Pass	Pass	Bare Pass.	Fail
Theory Papers					
Class Teaching					

17. Is there any other information which you feel the investigator should have in your case?

CARDIFF COLLEGE OF EDUCATION.

Sex M/F.

1

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Confidential.

College Reaction Questionnaire.

Spring Term 1965.

Please try to answer every question honestly and frankly.

A.G.J.

Much better:

Better:

The same:

Worse:

Much worse:

What grade do you think that you were probably awarded on this practice (X).

Very Good Pass A+, A, A-, B+	Good Pass B, B-	Pass C+, C, C-	Bare Pass D+, D.	Fail E, F.
------------------------------------	--------------------	-------------------	---------------------	---------------

What grade do you think that you are most likely to get on final practice (0)

All student teachers face some problems. Some of these are listed below.

Add any others which may occur to you.

(a) Show by a cross x how you feel most students are affected.

[illegible]

Difficulties with a Main Subject.

Difficulties with a Subsidiary Subject.

Difficulties of relations with members
of College staff.

Difficulties of relations with other students.

Difficulties in preparation of lessons.

Problems of Teaching Technique.

Problems of Class Discipline.

Difficulties of relations with members
of school staffs.

(5) (b) Show by a circle O how you feel you are personally affected.

Thank you for your co-operation.